

Oracle® Communications Convergent Charging Controller

Short Message Peer-to-Peer Protocol (SMPP) Protocol Implementation Conformance Statement



Release 15.2

G47959-01

January 2026

The Oracle logo, consisting of a solid red square with the word "ORACLE" in white, uppercase, sans-serif font centered within it.

ORACLE®

Oracle Communications Convergent Charging Controller Short Message Peer-to-Peer Protocol (SMPP) Protocol Implementation Conformance Statement, Release 15.2

G47959-01

Copyright © 2026, Oracle and/or its affiliates.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software, software documentation, data (as defined in the Federal Acquisition Regulation), or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs (including any operating system, integrated software, any programs embedded, installed, or activated on delivered hardware, and modifications of such programs) and Oracle computer documentation or other Oracle data delivered to or accessed by U.S. Government end users are "commercial computer software," "commercial computer software documentation," or "limited rights data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, reproduction, duplication, release, display, disclosure, modification, preparation of derivative works, and/or adaptation of i) Oracle programs (including any operating system, integrated software, any programs embedded, installed, or activated on delivered hardware, and modifications of such programs), ii) Oracle computer documentation and/or iii) other Oracle data, is subject to the rights and limitations specified in the license contained in the applicable contract. The terms governing the U.S. Government's use of Oracle cloud services are defined by the applicable contract for such services. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle®, Java, MySQL, and NetSuite are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Inside are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Epyc, and the AMD logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.

Contents

1 Messaging Manager and SMPP Document Versions

Overview	1
Introduction	1
Messaging Manager	1
Messaging Manager implementation	1
SMPP	2
SMPP document	2

2 Compliance Statements For SMPP Sessions (2)

Overview	1
Introduction	1
References to The Specification	1
Convention	1
Specification Clauses 2.1 and 2.2	1
Application Layer Communication (2.1)	1
Establishing a SMPP Session (2.2)	1
Session States (2.3)	1
Open (2.3.1)	1
Bound_TX (2.3.2)	2
Bound_RX (2.3.3)	2
Bound_TRX (2.3.4)	2
Unbound (2.3.5)	2
Closed (2.3.6)	2
Outbound (2.3.7)	2
Operation Matrix (2.4)	2
Relevance	2
alert_notification	2
bind_receiver	2
bind_receiver_resp	2
bind_transceiver	3
bind_transceiver_resp	3
bind_transmitter	3
bind_transmitter_resp	3

broadcast_sm	3
broadcast_sm_resp	3
cancel_broadcast_sm	3
cancel_broadcast_sm_resp	3
cancel_sm	4
cancel_sm_resp	4
data_sm	4
data_sm_resp	4
deliver_sm	4
deliver_sm_resp	4
enquire_link	4
enquire_link_resp	4
generic_nack	4
outbind	4
query_broadcast_sm	5
query_broadcast_sm_resp	5
query_sm	5
query_sm_resp	5
replace_sm	5
replace_sm_resp	5
submit_multi	6
submit_multi_resp	6
submit_sm	6
submit_sm_resp	6
unbind	6
unbind_resp	6
PDU Sequencing (2.6)	6
The PDU Sequence Number (2.6.1)	6
Why use Monotonically Increasing Sequence numbers? (2.6.2)	6
Sequence Numbers Across Sessions (2.6.3)	6
Synchronous Vs. Asynchronous (2.6.4)	6
Why Asynchronous? (2.6.5)	7
Session Timers (2.7)	7
Relevance	7
Session Init Timer	7
Enquire Link Timer	7
Inactivity Timer	7
Response Timer	7
Error Handling (2.8)	7
Handling Connection Failure (2.8.1)	7
Operation Failure (2.8.2)	8
The PDU is unrecognised	8

The PDU is malformed	8
Invalid Field Length	8
The PDU data is unexpected and deemed invalid	8
The PDU is not allowed in the current session state	8
The ESME or MC is restricting the use of certain PDUs or features	8
Flow Control and Congestion Avoidance (2.9)	9
Compliance statement	9
Session Security and Encryption (2.10)	9
Leased Lines (2.10.1)	9
Secure Transport Layer (2.10.2)	9
Secure VPN (2.10.3)	9
Secure Tunnel (2.10.4)	9
Forward and Backward Compatibility (2.11)	10
General	10
Forward Compatibility (2.11.1)	10
Backward Compatibility (2.11.2)	10

3 Compliance Statements For SMPP Parameter and PDU Format (3)

Overview	1
Introduction	1
Parameter Type Definitions (3.1)	1
SMPP PDU Parameter Types (Table 3-1)	1
NULL Settings (3.1.1)	1
SMPP Parameter Field Size Notation (3.1.2)	1
General PDU Format (3.2)	1
SMPP PDU Format (Table 3-4)	1
PDU Format (3.2.1)	1
Command_length (3.2.1.1)	1
Command_id (3.2.1.2)	1
Command_status (3.2.1.3)	2
Sequence_number (3.2.1.4)	2
Standard Parameters (3.2.1.5)	2
TLV Parameters (3.2.1.6)	2
A sample PDU (3.2.2)	2

4 Compliance Statements For SMPP PDU Definitions (4)

Overview	1
Introduction	1
Session Management Operations (4.1)	1
General	1

Bind Operation (4.1.1)	1
bind_transmitter Syntax (4.1.1.1)	1
bind_transmitter_resp Syntax (4.1.1.2)	1
bind_receiver Syntax (4.1.1.3)	1
bind_receiver_resp Syntax (4.1.1.4)	2
bind_transceiver Syntax (4.1.1.5)	2
bind_transceiver_resp Syntax (4.1.1.6)	2
outbind Syntax (4.1.1.7)	2
unbind Syntax (4.1.1.8)	2
unbind_resp Syntax (4.1.1.9)	2
Enquire Link Operation (4.1.2)	2
enquire_link Syntax (4.1.2.1)	2
enquire_link_resp Syntax (4.1.2.2)	2
Alert Notification Operation (4.1.3)	3
alert_notification Syntax (4.1.3.1)	3
Generic NACK Operation (4.1.4)	3
generic_nack Syntax (4.1.4.1)	3
Message Submission Operations (4.2)	3
submit_sm Syntax (4.2.1.1)	3
submit_sm_resp Syntax (4.2.1.2)	5
data_sm Syntax (4.2.2.1)	5
data_sm_resp Syntax (4.2.2.2)	5
submit_multi Syntax (4.2.3.1)	5
submit_multi_resp Syntax (4.2.3.2)	6
Message Submission Request TLVs (4.2.4)	6
Message Submission Response TLVs (4.2.5)	7
Source and Destination Addressing (4.2.6)	7
International and National Format (4.2.6.1.1)	8
Alphanumeric Format (4.2.6.1.2)	8
NPI (4.2.6.2)	8
ESME Addresses (4.2.6.3)	8
Service Short Code	8
International Number	8
NULL Address	8
Message Replace operation in submit_sm (4.2.7)	9
Message Length (4.2.8)	9
Registered (4.2.9.1)	9
Scheduled (4.2.9.2)	9
Pre-defined (4.2.9.3)	9
Message Modes (4.2.10)	9
Default Message Mode (4.2.10.1)	9
Store and Forward Message Mode (4.2.10.2)	10

Datagram Message Mode (4.2.10.3)	10
Transaction Message Mode (4.2.10.4)	10
Message Delivery Operations (4.3)	10
deliver_sm Syntax (4.3.1.1)	10
deliver_sm_resp Syntax (4.3.1.2)	10
data_sm Operation (4.3.2)	10
Message Delivery Request TLVs (4.3.3)	11
Message Delivery Response TLVs (4.3.4)	11
MC Delivery Receipt (4.3.5.1)	11
Intermediate Notification (4.3.5.2)	11
SME Delivery Acknowledgement (4.3.5.3)	11
SME Manual/User Acknowledgement (4.3.5.4)	11
Conversation Abort (4.3.5.5)	12
Message Broadcast Operations (4.4)	12
broadcast_sm Operation (4.4.1)	12
broadcast_sm Syntax (4.4.1.1)	12
broadcast_sm_resp Syntax (4.4.1.2)	12
Broadcast Request Optional TLVs (4.4.2)	12
Broadcast Response Optional TLVs (4.4.3)	12
Message Replacement with broadcast_sm (4.4.4)	12
Ancillary Submission Operations (4.5)	13
cancel_sm Operation (4.5.1)	13
cancel_sm Syntax (4.5.1.1)	13
cancel_sm_resp Syntax (4.5.1.2)	13
query_sm Operation (4.5.2)	13
query_sm Syntax (4.5.2.1)	13
query_sm_resp Syntax (4.5.2.2)	13
replace_sm Operation (4.5.3)	13
replace_sm Syntax (4.5.3.1)	13
replace_sm_resp Syntax (4.5.3.2)	14
Message Replacement TLVs (4.5.3.3)	14
Ancillary Broadcast Operations (4.6)	14
query_broadcast_sm Operation (4.6.1)	14
query_broadcast_sm Syntax (4.6.1.1)	14
Query Broadcast Request Optional TLVs (4.6.1.2)	14
query_broadcast_sm_resp Syntax (4.6.1.3)	14
Query Broadcast Response Optional TLVs (4.6.1.4)	14
cancel_broadcast_sm Operation (4.6.2)	14
cancel_broadcast_sm Syntax (4.6.2.1)	15
Cancel Broadcast Optional TLVs (4.6.2.2)	15
cancel_broadcast_sm_resp Syntax (4.6.2.3)	15
PDU Field Definitions (4.7)	15

addr_ton, source_addr_ton, dest_addr_ton, esme_addr_ton (4.7.1)	15
addr_npi, source_addr_npi, dest_addr_npi, esme_addr_npi (4.7.2)	15
address_range (4.7.3)	15
UNIX Regular Expressions (4.7.3.1)	15
command_length (4.7.4)	15
command_id (4.7.5)	16
command_status, error_status_code (4.7.6)	16
data_coding (4.7.7)	18
destination_addr (4.7.8)	19
dest_flag (4.7.9)	19
dl_name (4.7.10)	19
esme_addr (4.7.11)	19
esm_class (4.7.12)	19
interface_version (4.7.13)	19
message_id (4.7.14)	19
message_state (4.7.15)	19
no_unsuccess (4.7.16)	19
number_of_dests (4.7.17)	20
password (4.7.18)	20
priority_flag (4.7.19)	20
protocol_id (4.7.20)	20
registered_delivery (4.7.21)	20
replace_if_present_flag (4.7.22)	20
scheduled_delivery_time (4.7.23.1)	20
validity_period (4.7.23.2)	21
final_date (4.7.23.3)	21
Absolute Time Format (4.7.23.4)	21
Relative Time Format (4.7.23.5)	21
sequence_number (4.7.24)	21
service_type (4.7.25)	21
short_message (4.7.26)	21
sm_default_msg_id (4.7.27)	21
sm_length (4.7.28)	22
source_addr (4.7.29)	22
system_id (4.7.30)	22
system_type (4.7.31)	22
PDU TLV Definitions (4.8)	22
Position of TLVs in SMPP messages (4.8)	22
TLV Tag (4.8.1)	22
TLV Length (4.8.2)	22
TLV Value (4.8.3)	23
TLV Definitions (4.8.4)	23

additional_status_info_text (4.8.4.1)	23
alert_on_message_delivery (4.8.4.2)	23
billing_identification (4.8.4.3)	23
broadcast_area_identifier, failed_broadcast_area_identifier (4.8.4.4)	23
Broadcast Area Format types (4.8.4.4.1)	23
broadcast_area_success (4.8.4.5)	23
broadcast_content_type_info (4.8.4.6)	23
broadcast_channel_indicator (4.8.4.7)	23
broadcast_content_type (4.8.4.8)	23
broadcast_end_time (4.8.4.9)	24
broadcast_error_status (4.8.4.10)	24
broadcast_frequency_interval (4.8.4.11)	24
broadcast_message_class (4.8.4.12)	24
broadcast_rep_num (4.8.4.13)	24
broadcast_service_group (4.8.4.14)	24
callback_num (4.8.4.15)	24
callback_num_atag (4.8.4.16)	24
callback_num_pres_ind (4.8.4.17)	24
congestion_state (4.8.4.18)	24
delivery_failure_reason (4.8.4.19)	24
dest_addr_np_country (4.8.4.20)	24
dest_addr_np_information (4.8.4.21)	25
dest_addr_np_resolution (4.8.4.22)	25
dest_addr_subunit (4.8.4.23)	25
dest_bearer_type (4.8.4.24)	25
dest_network_id (4.8.4.25)	25
dest_network_type (4.8.4.26)	25
dest_node_id (4.8.4.27)	25
dest_subaddress (4.8.4.28)	25
dest_telematics_id (4.8.4.29)	25
dest_port (4.8.4.30)	25
display_time (4.8.4.31)	26
dpf_result (4.8.4.32)	26
its_reply_type (4.8.4.33)	26
its_session_info (4.8.4.34)	26
language_indicator (4.8.4.35)	26
message_payload (4.8.4.36)	26
message_state (4.8.4.37)	26
more_messages_to_send (4.8.4.38)	26
ms_availability_status (4.8.4.39)	26
ms_msg_wait_facilities (4.8.4.40)	26
ms_validity (4.8.4.41)	27

network_error_code (4.8.4.42)	27
number_of_messages (4.8.4.43)	27
payload_type (4.8.4.44)	27
privacy_indicator (4.8.4.45)	27
qos_time_to_live (4.8.4.46)	27
receipted_message_id (4.8.4.47)	27
sar_msg_ref_num (4.8.4.48)	27
sar_segment_seqnum (4.8.4.49)	27
sar_total_segments (4.8.4.50)	27
sc_interface_version (4.8.4.51)	28
set_dpf (4.8.4.52)	28
sms_signal (4.8.4.53)	28
source_addr_subunit (4.8.4.54)	28
source_bearer_type (4.8.4.55)	28
source_network_id (4.8.4.56)	28
source_network_type (4.8.4.57)	28
source_node_id (4.8.4.58)	28
source_port (4.8.4.59)	28
source_subaddress (4.8.4.60)	28
source_telematics_id (4.8.4.61)	28
user_message_reference (4.8.4.62)	29
user_response_code (4.8.4.63)	29
ussd_service_op (4.8.4.64)	29

About This Content

This document describes the extent to which Messaging Manager conforms to the Short Message Peer-to-Peer Protocol Specification.

Audience

This document is intended to be read by Oracle staff. It has been prepared on the assumption that the reader is familiar with Messaging Manager as well as short message peer-to-peer protocols.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

Conventions

The following text conventions are used in this document.

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Messaging Manager and SMPP Document Versions

Overview

Introduction

This chapter defines the version of the Messaging Manager implementation and the SMPP document against which it is compared.

Messaging Manager

Messaging Manager implementation

- Target platform\
 - Platform - SPARC Solaris
 - OS - SunOs 5.9
 - Oracle - 9.2.05
- Build environment
- Compiler - GNU GCC 3.2.3
- Binutils - GNU binutils 2.1.4
- bison - 1.35
- flex - 2.5.4
- Oracle packages
- Full installation of:
 - SLEE - 3.2.0
 - HssScIf - 3.4.27
- Plus the following SLC packages:
 - smsScp - 3.0.0
 - acsScp - 2.4.0
 - beApiScp - 2.2.0.5
 - acsCbScp - 2.2.0.6
- Plus the following SMS packages:
 - smsSms - 3.0.0
 - acsSms - 2.4.0

- beApiSms - 2.2.0.5
- acsCbSms - 2.2.0.6

SMPP

SMPP document

This statement of compliance refers to SMS Forum document entitled:

Short Message Peer-to-Peer

Protocol Specification

Version 5.0

For the purpose of this document, *Short Message Peer-to-Peer Protocol Specification Version 5.0* will be referred to as *The Specification*.

2

Compliance Statements For SMPP Sessions (2)

Overview

Introduction

This chapter states the compliance of Messaging Manager with clauses of Section 2 of *The Specification*.

References to The Specification

Convention

As a cross reference, the clause number of *The Specification* is included in brackets at the end of each compliance statement title.

Specification Clauses 2.1 and 2.2

Application Layer Communication (2.1)

For TCP/IP connections, Messaging Manager complies.

For X.25 connections, Messaging Manager does not comply.

Messaging Manager does not support X.25.

Establishing a SMPP Session (2.2)

For TCP/IP connections, Messaging Manager complies.

For X.25 connections, Messaging Manager does not comply.

For SMPP, Messaging Manager can be configured to use any port including IANA standard port 2775.

X.25 is not supported by Messaging Manager.

Session States (2.3)

Open (2.3.1)

For TCP/IP connections, Messaging Manager complies.

For X.25 connections, Messaging Manager does not comply.

Bound_TX (2.3.2)

Messaging Manager complies.

Bound_RX (2.3.3)

Messaging Manager complies.

Bound_TRX (2.3.4)

Messaging Manager complies.

Unbound (2.3.5)

Messaging Manager complies.

Closed (2.3.6)

Messaging Manager complies.

Outbound (2.3.7)

Messaging Manager complies.

Messaging Manager can ignore outbind requests to a port if the port is configured not to receive.

Operation Matrix (2.4)

Relevance

The following compliance statements refer to *Table 2-1 Operation Matrix of The Specification*.

alert_notification

Messaging Manager complies.

Messaging Manager does not construct these messages but does relay them.

bind_receiver

Messaging Manager complies.

bind_receiver_resp

Messaging Manager complies.

bind_transceiver

Messaging Manager complies.

bind_transceiver_resp

Messaging Manager complies.

bind_transmitter

Messaging Manager complies.

bind_transmitter_resp

Messaging Manager complies.

broadcast_sm

Messaging Manager does not comply.

Code exists to decode the incoming broadcast message but `ProtocolHandler::stateBound()` does not consider this possibility and returns `genericNack`.

Messaging Manager does not construct this message.

broadcast_sm_resp

Messaging Manager does not comply.

Code exists to decode the incoming broadcast message but `ProtocolHandler::stateBound()` does not consider this possibility and returns `genericNack`.

Messaging Manager does not construct this message.

cancel_broadcast_sm

Messaging Manager does not comply.

Code exists to decode the incoming broadcast message but `ProtocolHandler::stateBound()` does not consider this possibility and returns `genericNack`.

Messaging Manager does not construct this message.

cancel_broadcast_sm_resp

Messaging Manager does not comply.

Code exists to decode the incoming broadcast message but `ProtocolHandler::stateBound()` does not consider this possibility and returns `genericNack`.

Messaging Manager does not construct this message.

cancel_sm

Messaging Manager complies.

Messaging Manager does not construct these messages but, if in a bound state, sends on received cancel messages. These messages are sent straight to the outgoing ProtocolHandler, bypassing ACS and xmsTrigger.

cancel_sm_resp

Messaging Manager complies.

- Messaging Manager sends received cancel response messages if in a bound state.
- These messages are sent straight to the outgoing ProtocolHandler, bypassing ACS and xmsTrigger.
- Messaging Manager only constructs these messages to reply to the cancel_sm if it is unable to forward the cancel_sm.

data_sm

Messaging Manager complies.

data_sm_resp

Messaging Manager complies.

deliver_sm

Messaging Manager complies.

deliver_sm_resp

Messaging Manager complies.

enquire_link

Messaging Manager complies.

enquire_link_resp

Messaging Manager complies.

generic_nack

Messaging Manager complies.

outbind

Messaging Manager complies.

query_broadcast_sm

Messaging Manager does not comply.

- Code exists to decode the incoming broadcast message, but `ProtocolHandler::stateBound()` does not consider this possibility and returns a `genericNack`.
- Messaging Manager does not construct this type of message.

query_broadcast_sm_resp

Messaging Manager does not comply.

- Code exists to decode the incoming broadcast message, but `ProtocolHandler::stateBound()` does not consider this possibility and returns a `genericNack`.
- Messaging Manager does not construct this type of message.

query_sm

Messaging Manager complies.

- Messaging Manager does not construct these messages.
- Messaging Manager relays received query messages if in a bound state. These messages are sent straight to the outgoing `ProtocolHandler`, bypassing ACS and `smsTrigger`.

query_sm_resp

Messaging Manager complies.

- Messaging Manager relays received query messages if in a bound state. These messages are sent straight to the outgoing `ProtocolHandler`, bypassing ACS and `smsTrigger`.
- Messaging Manager only constructs these messages to reply to a `query_sm` if it is unable to forward the `query_sm`.

replace_sm

Messaging Manager complies.

- Messaging Manager does not construct these messages.
- Messaging Manager relays received replace messages if in a bound state. These messages are sent straight to the outgoing `ProtocolHandler`, bypassing ACS and `smsTrigger`.

replace_sm_resp

Messaging Manager complies.

- Messaging Manager relays received replace response messages if in a bound state. These messages are sent straight to the outgoing `ProtocolHandler`, bypassing ACS and `smsTrigger`.

- Messaging Manager only constructs these messages to reply to a `replace_sm` if it is unable to forward the `replace_sm`.

submit_multi

Messaging Manager complies.

submit_multi_resp

Messaging Manager complies.

submit_sm

Messaging Manager complies.

submit_sm_resp

Messaging Manager complies.

unbind

Messaging Manager complies.

unbind_resp

Messaging Manager complies.

PDU Sequencing (2.6)

The PDU Sequence Number (2.6.1)

Messaging Manager complies.

Messaging Manager follows the recommended practice of monotonically increasing a sequence number that starts at 1. The number will clock-over at 231-1.

Why use Monotonically Increasing Sequence numbers? (2.6.2)

Messaging Manager complies.

Sequence Numbers Across Sessions (2.6.3)

Messaging Manager complies.

Each Messaging Manager SMPP connection maintains its own sequence number.

Synchronous Vs. Asynchronous (2.6.4)

Messaging Manager complies.

Why Asynchronous? (2.6.5)

Messaging Manager complies.

Session Timers (2.7)

Relevance

The following compliance statements refer to *Table 2-2 SMPP Session Timers of The Specification*.

Session Init Timer

Messaging Manager does not comply.

The timer value is the configured `outgoingTimeout` value. However, when a TCP/IP outbind connection has been established and the ESME is waiting for the outbound message, Messaging Manager obtains a timer value from the `idleTimeout` configuration option.

Enquire Link Timer

Messaging Manager complies.

The timer value is obtained from the `heartbeatTimeout` value.

Inactivity Timer

Messaging Manager complies.

- The timer value is obtained from the `heartbeatTimeout` value.
- The timer value expires in all states but the expiry handling code checks the current state before taking action.

Response Timer

Messaging Manager complies.

The timer value is the configured `outgoingTimeout` value.

Error Handling (2.8)

Handling Connection Failure (2.8.1)

Messaging Manager complies.

- After a failed SMSC connection attempt, the IP plugin tries every 10 seconds to reconnect.
- If an established connection is lost, reconnection attempts are only made if the connection is to an SMSC.
- Section 2.8.1 recommends retry for outbinds, but this is not performed by Messaging Manager itself.

Operation Failure (2.8.2)

The following six statements refer to the bulleted list in *The Standard*.

The PDU is unrecognised

Messaging Manager complies.

If a command ID cannot be determined, a genericNack is returned with ESME_RINVCMDID set.

The PDU is malformed

Messaging Manager complies.

- If a command ID cannot be determined, a genericNack is returned with ESME_RINVCMDID set.
- If the section length of a PDU is the reason for the command ID not being determined, ESME_RINVCMDLEN is returned in a genericNack.
- See also *command_status, error_status_code (4.7.6)* .

Invalid Field Length

Messaging Manager does not comply.

The type of message returned is a genericNack with ESME_RINVCMDID. This is not a response of the appropriate type.

The PDU data is unexpected and deemed invalid

Messaging Manager complies.

Messaging Manager does not need to consider any message data as invalid.

The PDU is not allowed in the current session state

Messaging Manager complies.

Where the received message does not have an appropriate response message type, genericNack is used.

The ESME or MC is restricting the use of certain PDUs or features

Messaging Manager complies.

Messaging Manager does not restrict the use of certain PDUs.

Flow Control and Congestion Avoidance (2.9)

Compliance statement

Messaging Manager does not comply.

- Messages that are unaltered by Messaging Manager and leave via the originating plugin will pass on any encoded congestion_state TLV correctly. However, all Messaging Manager constructed messages, and messages arriving from other plugins will not add a congestion_state TLV to a response.
- To become fully compliant, the GenericSM class:
- needs to be extended to include a representation of the congestion_state TLV, and
- needs to populate the TLV from the GenericSM in the outgoing plugin.

Some method of determining Messaging Manager's own congestion state (and populating GenericSM with it) would also be desirable.

Session Security and Encryption (2.10)

Leased Lines (2.10.1)

Messaging Manager complies.

The privacy of the network where Messaging Manager is deployed is obviously not determined by Messaging Manager itself.

Secure Transport Layer (2.10.2)

Messaging Manager does not comply.

- The SMPP plugin uses cmn::Socket for its connections. cmn::Socket does not support SSL.
- To become compliant:
- SSL support needs to be added to the socket class, and
- configuration for the SSL connection needs to be added to the plugin.

Secure VPN (2.10.3)

Messaging Manager complies.

For this type of encryption, there are no demands placed on either the ESME or MC.

Secure Tunnel (2.10.4)

Messaging Manager complies.

For this type of encryption, there are no demands placed on either the ESME or MC.

Forward and Backward Compatibility (2.11)

General

Messaging Manager complies with clause 2.11.

With bind requests, Messaging Manager sets `interface_version` to either the ASP's version or the version in Messaging Manager's `eserv.config`, whichever is the smaller. Only 0x34 and 0x50 are considered valid values.

Forward Compatibility (2.11.1)

Messaging Manager complies.

If a message leaves by the plugin that received it, unrecognised TLVs are inserted into the outgoing message.

Backward Compatibility (2.11.2)

Messaging Manager does not comply.

- Messaging Manager does not correctly support connections to an ESME or MC that only supports SMPP version 3.3 or earlier.
- In several places Messaging Manager adds TLVs to messages which may be SMPP version 3.3.
- No check on the `messageld` size is made, so it is possible to send a `messageld` greater than 8 octets in size.

3

Compliance Statements For SMPP Parameter and PDU Format (3)

Overview

Introduction

This chapter states the compliance of Messaging Manager with clauses of Section 3 of *The Specification*.

Parameter Type Definitions (3.1)

SMPP PDU Parameter Types (Table 3-1)

Messaging Manager complies.

NULL Settings (3.1.1)

Messaging Manager complies.

SMPP Parameter Field Size Notation (3.1.2)

Messaging Manager complies.

General PDU Format (3.2)

SMPP PDU Format (Table 3-4)

Messaging Manager complies.

PDU Format (3.2.1)

Messaging Manager complies.

Command_length (3.2.1.1)

Messaging Manager complies.

Command_id (3.2.1.2)

Messaging Manager complies.

Command_status (3.2.1.3)

Messaging Manager complies.

Responses will not include a message body if the command status is non-zero.

Sequence_number (3.2.1.4)

Messaging Manager complies.

Standard Parameters (3.2.1.5)

Messaging Manager complies.

TLV Parameters (3.2.1.6)

Messaging Manager complies.

Note that for mandatory TLVs, Messaging Manager expects the order to be the same as that specified in *The Standard*.

A sample PDU (3.2.2)

Messaging Manager complies.

4

Compliance Statements For SMPP PDU Definitions (4)

Overview

Introduction

This chapter states the compliance of Messaging Manager with clauses of Section 4 of *The Specification*.

Session Management Operations (4.1)

General

When specified, no limits are enforced for the parameters described in this section. However limits exist in the Messaging Manager database and the Routing Scheme subsystem which will limit the size of the specific parameter being passed on to the SMPP interface:

- The database and routing scheme limit the password to 50 and 51 characters respectively.
- The database and routingScheme limit the system_id to 15 and 16 characters respectively.

Bind Operation (4.1.1)

Messaging Manager complies.

bind_transmitter Syntax (4.1.1.1)

Messaging Manager complies.

- No limit is placed on the length of a C-Octet string.
- If configured incorrectly, Messaging Manager creates bind operations with passwords longer than nine characters.

bind_transmitter_resp Syntax (4.1.1.2)

Messaging Manager complies.

- The maximum of 16 characters for system_id is not enforced.
- sc_interface_version is not used.

bind_receiver Syntax (4.1.1.3)

Messaging Manager complies.

The maximum of 16 characters for `system_id` is not enforced.

`bind_receiver_resp` Syntax (4.1.1.4)

Messaging Manager complies.

- The maximum of 16 characters for `system_id` is not enforced.
- `sc_interface_version` is not used.

`bind_transceiver` Syntax (4.1.1.5)

Messaging Manager complies.

The maximum number of characters is not enforced for the variable length fields.

`bind_transceiver_resp` Syntax (4.1.1.6)

Messaging Manager complies.

- The maximum number of characters is not enforced for the variable length fields.
- `sc_interface_version` is not used.

`outbind` Syntax (4.1.1.7)

Messaging Manager complies.

The maximum number of characters is not enforced for the variable length fields.

`unbind` Syntax (4.1.1.8)

Messaging Manager complies.

`unbind_resp` Syntax (4.1.1.9)

Messaging Manager complies.

Enquire Link Operation (4.1.2)

Messaging Manager complies.

Messaging Manager takes any message type as a valid response.

`enquire_link` Syntax (4.1.2.1)

Messaging Manager complies.

`enquire_link_resp` Syntax (4.1.2.2)

Messaging Manager complies.

Alert Notification Operation (4.1.3)

Messaging Manager complies.

Messaging Manager does not construct these messages. It forwards them from the sender to the receiver.

alert_notification Syntax (4.1.3.1)

Messaging Manager complies.

Messaging Manager can decode and encode these messages correctly, but does not create them. In its current form, if Messaging Manager were to create an alert_notification message, the Address size maximum would not be enforced.

Generic NACK Operation (4.1.4)

Messaging Manager complies.

generic_nack Syntax (4.1.4.1)

Messaging Manager complies.

Message Submission Operations (4.2)

submit_sm Syntax (4.2.1.1)

Messaging Manager complies.

- Messaging Manager does not check for exceeding the maximum length of the variable length fields.
- The SMPP submit_sm message is stored as a GenericSM object. The GenericSM class is sub-classed from the GenericMessage parent class with message type set to Submit.
- The mapping from SMPP to GenericSM is described for each parameter as follows.
- **service_type** is set to null for outgoing messages. For incoming messages service_type is used to set the teleservice and allowAlternateDelivery via the teleserviceRoutingMap.
- **source_addr_ton, source_addr_npi, source_addr** is stored as the GenericMessage::OriginatingAddress in GenericSM.
- **dest_addr_ton, dest_addr_npi, dest_addr** is stored as the GenericMessage::DestinationAddress in GenericSM.
- **esm_class** is not stored as one field in submit_sm, but individual bits are set/read from many fields. The esm_class is stored in multiple fields in the GenericMessage/GenericSM:

SMPP esm_class bits	GenericSM fields
0x3c (Message Type: Bits 2-5)	Determines how the message type is set. See <i>MC Delivery Receipt (4.3.5.1)</i> , <i>Intermediate Notification (4.3.5.2)</i> , <i>SME Delivery Acknowledgement (4.3.5.3)</i> , <i>SME Manual/User Acknowledgement (4.3.5.4)</i> and <i>Conversation Abort (4.3.5.5)</i> for information on delivery receipt handling.

SMPP esm_class bits	GenericSM fields
0x40 (GSM Specific: UDHI Bit)	Used to determine the presence of a userDataHeader (GenericSM::userDataHeaderPresent).
0x03 (Messaging Mode: Bits 1-0)	GenericSM::singleShot (0x01 => true, all others => false).
0x80 (GSM Specific: Reply Path Bit)	ProvideReplyPath (direct copy) GenericMessage::allowAlternateDelivery (false for non zero).

- **protocol_id** is stored in GenericSM::protocolIdentifier.
- **priority_flag** is stored in GenericMessage::priorityIndicator (0 => PriorityNormal, 1=> PriorityInteractive).
- **schedule_delivery_time** is not stored in GenericSM. Therefore only maintained if the message exits Messaging Manager via the incoming plugin and is not modified.
- **validity_period** qos_time_to_live is ignored by Messaging Manager when creating GenericSM. The validity period is converted to the GenericSM::ValidityPeriod class and stored in GenericSM::validityPeriod.
- **registered_delivery** is stored in GenericSM::statusReportRequest for non-deliver_sm messages. deliver_sm requests with registered_delivery are ignored and not stored in GenericSM::statusReportRequest. Messaging Manager outbound messages have registeredDelivery updated to reflect the statusReportRequest field of GenericSM.

GenericSM::statusReportRequest	Effect on registeredDelivery
xmsRequested, bothRequested	Set bit 0 to 1 and bit 1 to 0.
SmeRequested	Set to 1 if registeredDelivery is 0.
NotRequired	Set to 0.

- **replace_if_present_flag** is not stored in GenericSM.
- **data_coding** is generally stored in GenericSM as GenericSM::desiredAlphabet and also in several other fields for GSM data coding values. DataCodingElement structure is used as an intermediary in the mapping of data_coding to and from GenericSM parameters. The SMPP data_coding value is mapped and stored in one or more of the following parameters of the GenericSM:
 - desiredAlphabet
 - messageClass - only for GSM MC data_coding values.
 - mwg (MessageWaitingGroup) - only for GSM MWI data_coding values.
 - mwi (messageWaitingIndicator) - only for GSM MWI data_coding values.
 - mwt (MessageWaitingType) - only for GSM MWI data_coding values.

See *data_coding* (4.7.7) for additional details.

- **sm_default_msg_id** is not stored in GenericSM.
- **sm_length** is not stored in GenericSM. Instead the field is generated on outgoing messages from the userData.
- **short_message** The message_payload TLV is read by Messaging Manager with priority over the short_message field. If no message_payload is present, the short_message field is stored in GenericSM::userData. Outgoing messages have short_message set to the

userData (with no message_payload TLV present) if less than 255 in size, otherwise it is set in the message_payload TLV.

- **message_submission TLVs** are considered in section *Message Submission Request TLVs (4.2.4)*.

submit_sm_resp Syntax (4.2.1.2)

Messaging Manager complies.

- Messaging Manager does not check for exceeding the maximum length of the variable length fields.
- Messaging Manager stores the message as a GenericSMResult.
- **message_id** is stored as GenericSMResult::deliverReceiptId.
- **message_submission response TLVs** are considered in section *Message Submission Response TLVs (4.2.5)*.

data_sm Syntax (4.2.2.1)

Messaging Manager complies.

- Messaging Manager does not check for exceeding the maximum length of the variable length fields. The fields are used in the same way as submit_sm to construct an Messaging Manager GenericSM.
- The GenericMessage message type is set to MT_Submit if the message comes from an SME, or MT_Deliver if the message comes from an SMSC.

data_sm_resp Syntax (4.2.2.2)

Messaging Manager complies.

- Messaging Manager does not check for exceeding the maximum length of the variable length fields.
- The fields are used in the same way as submit_sm_resp to construct an Messaging Manager GenericSMResult.

submit_multi Syntax (4.2.3.1)

Messaging Manager complies.

- submit_multi messages are processed internally in Messaging Manager by creating a GenericSM for each terminating address. The handling of each field is thus the same as for submit_sm, with the exception of destinationAddress.
- The GenericMessage message type is set to Submit.
- Distribution Lists are recognised but not supported. ESME_RCNTSUBDL, "Cannot Submit to Distribution List", is returned.
- Although individual GenericSM components may be modified by Messaging Manager, these changes are not incorporated into the submit_multi forwarded to the SMSC, as any choice would be arbitrary. The forwarded submit_multi is derived from the originating message.

submit_multi_resp Syntax (4.2.3.2)

Messaging Manager complies.

Messaging Manager does not check for exceeding the maximum length of the variable length fields. The fields are used in the same way as submit_sm_resp to construct a Messaging Manager GenericSMResult. The GenericSMResult has no knowledge of the unsuccess_sme structure, as it deals with only a single message. The SMPP plugin does, however, create the unsuccess_sme from the individual submit_sm_resps.

Message Submission Request TLVs (4.2.4)

Messaging Manager does not comply.

The following table sets out the way Messaging Manager manages each of the TLVs listed in Table 4-20 of *The Specification*. A TLV stated as being ignored by Messaging Manager can still be passed on if the message is unchanged and the message uses the same outgoing and incoming plugin.

TLV Name	Messaging Manager treatment
alert_on_msg_delivery	Ignored
billing_identification	Ignored
callback_num	Ignored
callback_num_atag	Ignored
callback_num_pres_ind	Ignored
dest_addr_np_country	Ignored
dest_addr_np_information	Ignored
dest_addr_np_resolution	Ignored
dest_addr_subunit	Stored in GenericSM::messageClass. Present in outgoing messages if value is not GenericSM::MessageClassNone.
dest_bearer_type	Ignored
dest_network_id	Ignored
dest_network_type	Stored in GenericMessage::messageProtocol.
dest_node_id	Ignored
dest_subaddress	Ignored
dest_telematics_id	Ignored
dest_port	Ignored
display_time	Ignored
its_reply_type	Ignored
its_session_info	Ignored
language_indicator	Ignored
message_payload	Used to create the GenericSM::userData. Present on outgoing messages when userData > 255 characters.
more_messages_to_send	Ignored
ms_msg_wait_facilities	Stored in GenericSM::mwt (MessageWaitingType) and GenericSM::mwi (MessageWaitingIndicator).
ms_validity	Stored in GenericSM::mwg (MessageWaitingGroup). Only value 0 (Store Indefinitely) will be correctly saved. Other values will be treated as GenericSM::MessageWaitingGroupDiscard. Outgoing messages will contain values 0 (Store Indefinitely) or 3 (Display Only) only.

TLV Name	Messaging Manager treatment
number_of_messages	Ignored
payload_type	Ignored
privacy_indicator	Ignored
qos_time_to_live	Ignored
sar_msg_ref_num	Stored in GenericSM::segmentReference. Outgoing messages will either have this reference in the userDataHeader or this TLV (depending on if the message was modified by MMX).
sar_segment_seqnum	Stored in GenericSM::segmentNumber. Outgoing messages will either have this reference in the userDataHeader or this TLV (depending on if the message was modified by Messaging Manager).
sar_total_segments	Stored in GenericSM::segmentCount. Outgoing messages will either have this reference in the userDataHeader or this TLV (depending on if the message was modified by Messaging Manager).
set_dpf	Ignored
sms_signal	Ignored
source_addr_subunit	Ignored
source_bearer_type	Ignored
source_network_id	Used to set the GenericSM::sourceLocationInformation, which is triggered to ACS as the location number.
source_network_type	Ignored
source_node_id	Ignored
source_port	Ignored
source_subaddress	Ignored
source_telematics_id	Ignored
user_message_reference	Stored in GenericSM::messageReference. Present in outgoing messages if value greater than zero.
user_response_code	Ignored
ussd_service_op	Ignored

Message Submission Response TLVs (4.2.5)

Messaging Manager does not comply.

A TLV stated as being ignored by Messaging Manager can still be passed on if the message is unchanged and the message uses the same outgoing and incoming plugin.

The following table sets out the way Messaging Manager manages each of the TLVs listed in Table 4-21 of *The Specification*.

TLV Name	Messaging Manager treatment
additional_status_info_text	Ignored
delivery_failure_reason	Ignored
dpf_result	Ignored
network_error_code	Ignored

Source and Destination Addressing (4.2.6)

Messaging Manager does not comply.

- Messaging Manager does not consider that the `source_addr` may be NULL. The originating address is populated by the source fields, regardless of their values.
- Messaging Manager complies partially in that it understands the TON, NPI and address fields of a mobile number.

International and National Format (4.2.6.1.1)

Messaging Manager complies.

Alphanumeric Format (4.2.6.1.2)

Messaging Manager does not comply.

- The AMC part of Messaging Manager does not comply because ACS is triggered by BcdDigits which cannot handle alphabetical characters.
- Messaging Manager complies if a message does not trigger a call-plan.

NPI (4.2.6.2)

Messaging Manager complies.

Messaging Manager also handles an NPI of 13 to represent PC:SSN. This value should only be used for SCCP level addresses.

ESME Addresses (4.2.6.3)

Compliance statements are made under the following headings:

- Service Short Code
- International Number, and
- NULL Address.

These headings correspond to the bullet list in clause 4.2.6.3 of *The Specification*.

Service Short Code

Messaging Manager complies.

International Number

Messaging Manager complies.

NULL Address

Messaging Manager does not comply.

Messaging Manager cannot substitute a default source address into the GenericSM. A non-NULL address is required for a delivery receipt to be sent. This could be implemented in the future with a simple change to the originating plugin.

Message Replace operation in submit_sm (4.2.7)

Messaging Manager does not comply.

The `replace_if_present` flag is ignored by Messaging Manager, and not placed in outgoing messages (unless the message is unaltered and goes out the incoming plugin). The `service_type` field is also not preserved by Messaging Manager. `replace_sm` messages are forwarded on, so this is the only way to send a message replace through Messaging Manager.

Message Length (4.2.8)

Messaging Manager complies.

Messaging Manager can handle up to 255 characters in `short_message`. Messages that are too long will be placed in the `message_payload` TLV. Messaging Manager does not consider the possibility of the MC only having space for 140 octets (that is, the 255 limit is hard-coded).

Registered (4.2.9.1)

Messaging Manager does not comply.

See *submit_sm Syntax (4.2.1.1)* .

Scheduled (4.2.9.2)

Messaging Manager does not comply.

The `scheduled_delivery_value` is ignored in constructing a `GenericSM`. However, Messaging Manager is capable of detecting the presence of the `scheduled_delivery_value` and such messages will be FDA-barred internally so that these messages, where appropriate, will be sent to an alternative Message Centre for proper handling at the scheduled delivery time.

Pre-defined (4.2.9.3)

Messaging Manager does not comply.

The `sm_default_msg_id` is not stored in the `GenericSM` class. Messaging Manager does not examine this value on incoming messages either.

Message Modes (4.2.10)

Messaging Manager does not comply.

The `esm_class` value is not directly stored in `GenericSM`. See the following four compliance statements for more detail.

Default Message Mode (4.2.10.1)

Messaging Manager complies.

If the incoming message has bits 0 and 1 set to zero, so will the outgoing message.

Store and Forward Message Mode (4.2.10.2)

Messaging Manager does not comply.

This part of the `esm_class` is reconstructed as 00 (default message mode) if the outgoing message is changed and is not `singleShot`.

Datagram Message Mode (4.2.10.3)

Messaging Manager complies.

The `singleShot` variable in `GenericSM` correctly captures this behaviour. Note that the delivery receipt may still be requested via the `registered_delivery` field.

Transaction Message Mode (4.2.10.4)

Messaging Manager does not comply.

Messaging Manager does not set bit 1 to 1 for an altered message. Note that an SMPP Transaction mode message which came into Messaging Manager has `allowAlternateDelivery` set to false, so we will go out the same plugin, and the outgoing message will be Transaction mode, provided the `singleShot` nature was not changed by Messaging Manager.

Message Delivery Operations (4.3)

deliver_sm Syntax (4.3.1.1)

Messaging Manager complies.

- A `deliver_sm` is handled similarly to a `submit_sm`. See *submit_sm Syntax (4.2.1.1)* for detailed handling of each message tag.
- `genericMessage`'s message type is set to Deliver unless the `deliver_sm` contains a delivery receipt. See *MC Delivery Receipt (4.3.5.1)* on this page, *Intermediate Notification (4.3.5.2)* on this page, *SME Delivery Acknowledgement (4.3.5.3)*, *SME Manual/User Acknowledgement (4.3.5.4)* and *Conversation Abort (4.3.5.5)*.

deliver_sm_resp Syntax (4.3.1.2)

Messaging Manager complies.

- A `deliver_sm` is handled similarly to a `submit_sm`. The main difference is that the `GenericMessage::messageType` is changed to `MT_Notify` for a Status Report.
- See *submit_sm_resp Syntax (4.2.1.2)* for a detailed description of the handling of each message tag.

data_sm Operation (4.3.2)

Messaging Manager complies.

See *data_sm Syntax (4.2.2.1)* and *data_sm_resp Syntax (4.2.2.2)* for more information.

Message Delivery Request TLVs (4.3.3)

TLVs not covered in *Message Submission Request TLVs (4.2.4)* and *Message Submission Response TLVs (4.2.5)* are listed in the following table.

TLV Name	Messaging Manager treatment
message_state	Stored in GenericSM::deliverySucceeded (as equal to DELIVERED or not). This field is set to false if the TLV is not present.
receipted_message_id	Stored in GenericSM::deliveryReceiptId. This field is set to blank if the TLV is not present.

Message Delivery Response TLVs (4.3.4)

For compliance statements see *Message Submission Response TLVs (4.2.5)*.

MC Delivery Receipt (4.3.5.1)

Messaging Manager complies.

- message_state and receipted_message_id are observed, but the network_error_id field is ignored by Messaging Manager.
- The GenericMessage's message type is set to Notify and message contents set to Delivery Receipt.

Intermediate Notification (4.3.5.2)

Messaging Manager complies.

- If the MC passes Messaging Manager one of these messages, it will pass it on (setting allowAlternateDelivery to false). Of the fields listed as important, only network_error_id is ignored by Messaging Manager.
- The GenericMessage's message type is set to Notify and message contents set to Delivery Receipt.

SME Delivery Acknowledgment (4.3.5.3)

Messaging Manager complies.

- If the MC passes Messaging Manager one of these messages, it will pass it on (setting allowAlternateDelivery to false).
- The GenericMessage's message type is set to Notify and message contents set to Delivery Receipt.

SME Manual/User Acknowledgment (4.3.5.4)

Messaging Manager complies.

If the MC passes Messaging Manager one of these messages, it will pass it on (setting allowAlternateDelivery to false).

The GenericMessage's message type is set to Notify and message contents set to Delivery Receipt.

Conversation Abort (4.3.5.5)

Messaging Manager complies.

If the MC passes Messaging Manager one of these messages, Messaging Manager will pass it on.

Message Broadcast Operations (4.4)

broadcast_sm Operation (4.4.1)

Messaging Manager does not comply.

Messaging Manager responds to broadcast_sm messages with a genericNack.

broadcast_sm Syntax (4.4.1.1)

Messaging Manager does not comply.

- Messaging Manager does not attempt to construct a GenericMessage. Messaging Manager does not attempt to handle individual fields or interpreted them.
- Messaging Manager can construct a fully compliant internal representation of a broadcast_sm, but it cannot translate this object to GenericMessage.

broadcast_sm_resp Syntax (4.4.1.2)

Messaging Manager does not comply.

See *broadcast_sm Operation (4.4.1)*, above.

Broadcast Request Optional TLVs (4.4.2)

Messaging Manager does not comply.

See *broadcast_sm Operation (4.4.1)*, above.

Broadcast Response Optional TLVs (4.4.3)

Messaging Manager does not comply.

See *broadcast_sm Operation (4.4.1)*, above.

Message Replacement with broadcast_sm (4.4.4)

Messaging Manager does not comply.

See *broadcast_sm Operation (4.4.1)*, above.

Ancillary Submission Operations (4.5)

cancel_sm Operation (4.5.1)

Messaging Manager complies.

cancel_sm operations are sent straight to the outgoing protocolHandler, never entering xmsTrigger or ACS. Thus, the message passed on is an exact copy of the incoming message.

cancel_sm Syntax (4.5.1.1)

Messaging Manager complies.

The incoming message is copied to the outgoing message, so Messaging Manager is compliant, assuming that the message originator is compliant.

cancel_sm_resp Syntax (4.5.1.2)

Messaging Manager complies.

See *cancel_sm Syntax (4.5.1.1)* .

query_sm Operation (4.5.2)

Messaging Manager complies.

query_sm operations are sent straight to the outgoing protocolHandler, never entering xmsTrigger or ACS. Thus, the message passed on is an exact copy of the incoming message.

query_sm Syntax (4.5.2.1)

Messaging Manager complies.

The incoming message is copied to the outgoing message, so Messaging Manager is compliant, assuming that the message originator is compliant.

query_sm_resp Syntax (4.5.2.2)

Messaging Manager complies.

See *query_sm Syntax (4.5.2.1)* .

replace_sm Operation (4.5.3)

Messaging Manager complies.

replace_sm operations are sent straight to the outgoing protocolHandler, never entering xmsTrigger or ACS. Thus, the message passed on is an exact copy of the incoming message.

replace_sm Syntax (4.5.3.1)

Messaging Manager complies.

The incoming message is copied to the outgoing message, so Messaging Manager is compliant, assuming that the message originator is compliant.

replace_sm_resp Syntax (4.5.3.2)

Messaging Manager complies.

See *replace_sm Syntax (4.5.3.1)* .

Message Replacement TLVs (4.5.3.3)

Messaging Manager complies.

See *replace_sm Syntax (4.5.3.1)* .

Ancillary Broadcast Operations (4.6)

query_broadcast_sm Operation (4.6.1)

Messaging Manager does not comply.

Messaging Manager responds to *query_broadcast_sm* messages with a *genericNack*.

query_broadcast_sm Syntax (4.6.1.1)

Messaging Manager does not comply.

- Messaging Manager does not attempt to construct a *GenericMessage*. Messaging Manager does not attempt to handle individual fields nor does it interpret them.
- Messaging Manager can construct a fully compliant internal representation of a *query_broadcast_sm*, but it cannot translate the representation to a *GenericMessage*.

Query Broadcast Request Optional TLVs (4.6.1.2)

Messaging Manager does not comply.

See *query_broadcast_sm Operation (4.6.1)* in this topic.

query_broadcast_sm_resp Syntax (4.6.1.3)

Messaging Manager does not comply.

See *query_broadcast_sm Operation (4.6.1)* in this topic.

Query Broadcast Response Optional TLVs (4.6.1.4)

Messaging Manager does not comply.

See *query_broadcast_sm Operation (4.6.1)* in this topic.

cancel_broadcast_sm Operation (4.6.2)

Messaging Manager does not comply.

- Messaging Manager does not attempt to construct a GenericMessage. Messaging Manager does not attempt to handle individual fields nor does it interpret them.
- Messaging Manager can construct a fully compliant internal representation of a cancel_broadcast_sm, but it cannot translate the representation to a GenericMessage.

cancel_broadcast_sm Syntax (4.6.2.1)

Messaging Manager does not comply.

See *cancel_broadcast_sm Operation (4.6.2)* in this topic.

Cancel Broadcast Optional TLVs (4.6.2.2)

Messaging Manager does not comply.

See *cancel_broadcast_sm Operation (4.6.2)* in this topic.

cancel_broadcast_sm_resp Syntax (4.6.2.3)

Messaging Manager does not comply.

See *cancel_broadcast_sm Operation (4.6.2)* in this topic.

PDU Field Definitions (4.7)

addr_ton, source_addr_ton, dest_addr_ton, esme_addr_ton (4.7.1)

Messaging Manager complies.

addr_npi, source_addr_npi, dest_addr_npi, esme_addr_npi (4.7.2)

Messaging Manager does not comply.

The values for Internet (IP) and WAP Client Id are not considered. Messaging Manager also has an extra value of 13 for point codes.

address_range (4.7.3)

Messaging Manager does not comply.

address_range is always NULL in messages constructed by Messaging Manager. The value of the field is ignored in interpreting messages received by Messaging Manager.

UNIX Regular Expressions (4.7.3.1)

Messaging Manager does not comply.

Not relevant as the address_range is never used by Messaging Manager. See *address_range (4.7.3)*.

command_length (4.7.4)

Messaging Manager complies.

command_id (4.7.5)

Messaging Manager complies.

command_status, error_status_code (4.7.6)

Messaging Manager complies.

- All values are correct.
- Errors not explicitly mentioned as transientFailures are treated as permanentFailures.
- If a message is throttled by Messaging Manager, a status code determined by the throttledCommandStatus configuration parameter will be returned. This defaults to ESME_RTHROTTLED.
- "Not used" implies that incoming messages are not checked for the associated error.
- For the Reject action, Messaging Manager can be configured to return any SMPP error_code. To do this Messaging Manager uses a configured mapping from ACS CS1ReleaseCause. If configured by the user, all cause codes are treated as "Compliant in outbound direction".

Default "Not Used" cause code values are shown in the following table.

Command status name	Usage compliance
ESME_ROK	Messaging Manager complies. Treated as GenericSMResult::resultSuccess.
ESME_RINVMSGLEN	Messaging Manager complies.
ESME_RINVCMDLEN	Messaging Manager complies.
ESME_RINVCMDID	Messaging Manager complies.
ESME_RINVBNDSTS	Messaging Manager complies. Receipt is treated as a GenericSMResult::resultTransientFailure.
ESME_RALYBND	Messaging Manager complies.
ESME_RINVPRTFLG	Not used.
ESME_RINVREGDLVFLG	Not used.
ESME_RSYSERR	Messaging Manager complies. <ul style="list-style-type: none"> • In the message outbound direction, receipt is treated as a GenericSMResult::resultTransient-Failure. • In the message inbound direction, an abort result type (GenericSMResult::resultAbort) will cause this code to be sent.
ESME_RINVSRCADR	Not used
ESME_RINVDSTADR	Not used
ESME_RINVMSGID	Not used
ESME_RBINDFAIL	Messaging Manager complies.
ESME_RINVPASWD	Not used
ESME_RINVSYSID	Not used
ESME_RCANCELFAIL	Messaging Manager complies.
ESME_RREPLACEFAIL	Messaging Manager complies.

Command status name	Usage compliance
ESME_RMSGQFUL	Messaging Manager complies. <ul style="list-style-type: none"> Messaging Manager is configured with <code>maxConcurrentTransactions</code>. When this is exceeded, MSGQFUL is replied to the sender. Receipt of a MSGQFUL is treated as an <code>GenericSMResult::resultTransient-Failure</code>
ESME_RINVSERTYP	Not used
ESME_RINVNUMDESTS	Not used
ESME_RINVDLNAME	Not used
ESME_RINVDESTFLAG	Not used
ESME_RINVSUBREP	Not used
ESME_RINVESMCLASS	Not used
ESME_RCNTSUBDL	Messaging Manager complies.
ESME_RSUBMITFAIL	Not used
ESME_RINVSRCNPI	Not used
ESME_RINVDSTTON	Not used
ESME_RINVDSTNPI	Not used
ESME_RINVSYSTYP	Not used
ESME_RINVREPFLAG	Not used
ESME_RINVNUMMSGS	Not used
ESME_RTHROTTLED	Messaging Manager complies. The throttling response code can be changed via the eserv.config default smpp parameter 'throttledCommandStatus'.
ESME_RINVSCHED	Not used
ESME_RINVEXPIRY	Not used
ESME_RINVDFTMSGID	Not used
ESME_RX_T_APPN	Treated as a <code>GenericSMResult::resultTransient-Failure</code> . TransientFailures are mapped to this value. Also used for duplicate sequence numbers and failure to send a message to transaction or to construct a transaction object.
ESME_RX_P_APPN	PermanentFailures are mapped to this.
ESME_RX_R_APPN	Treated as a <code>GenericSMResult::resultTransientFailure</code> .
ESME_RQUERYFAIL	Messaging Manager complies.
ESME_RINVTLVSTREAM	Not used
ESME_RTLVNOTALLWD	Not used
ESME_RINVTLVLEN	Not used
ESME_RMISSINGTLV	Messaging Manager complies.
ESME_RINVTLVVAL	Not used
ESME_RDELIVERYFAILURE	Not used
ESME_RUNKNOWNERR	Messaging Manager complies. Receipt is treated as a <code>GenericSMResult::resultTransient-Failure</code> .
ESME_RSERTYPUNAUTH	Receipt is treated as a <code>GenericSMResult::resultTransient-Failure</code> .
ESME_RPROHIBITED	Not used.

Command status name	Usage compliance
ESME_RSERTYPUNAVAIL	Not used
ESME_RSERTYPDENIED	Not used
ESME_RINVDCS	Not used
ESME_RINVSRCADDRSUBUNIT	Not used
ESME_RINVDSTADDRSUBUNIT	Not used
ESME_RINVBCASTFREQINT	Not used
ESME_RINVBCASTALIAS_NAME	Not used
ESME_RINVBCASTAREAFMT	Not used
ESME_RINVNUMBCAST_AREAS	Not used
ESME_RINVBCASTCNTTYPE	Not used
ESME_RINVBCASTMSGCLASS	Not used
ESME_RBCASTFAIL	Not used
ESME_RBCASTQUERYFAIL	Not used
ESME_RBCASTCANCELFAIL	Not used
ESME_RINVBCAST_REP	Not used
ESME_RINVBCASTSRVGRP	Not used
ESME_RINVBCASTCHANIND	Not used

data_coding (4.7.7)

Messaging Manager complies.

See *submit_sm Syntax (4.2.1.1)* .

- Generally, `data_coding` is stored in `GenericSM::desiredAlphabet`, but depending on its value (for GSM MWI and GSM MC values), `data_coding` may also be stored in:
- `GenericSM::mwi` (message waiting indicator)
- `GenericSM::mwig` (message waiting group)
- `GenericSM::mwt` (message waiting type)
- `GenericSM::messageClass`
- Except for `GenericSM::desiredAlphabet`, the presence of SMPP's optional parameters such as
- TLV `ms_validity`,
- TLV `ms_msg_wait_facilities`, and
- TLV `dest_addr_subunit`

will override the `GenericSM` `mwi`, `mwig`, `mwt` and/or `messageClass` parameters described above.

- In Messaging Manager, `data_coding` is mapped to and from a `dataCodingElement` structure. Messaging Manager uses `inboundDataCodingMap` and `outboundDataCodingMap` of the SMPP Plugin. The `dataCodingElement`:
- is used to populate the `GenericSM` parameters described above for the inbound case, and
- is populated from the `GenericSM` parameters described above for the outbound case.

destination_addr (4.7.8)

Messaging Manager complies.

dest_flag (4.7.9)

Messaging Manager complies.

Messaging Manager does not support distribution lists themselves.

dl_name (4.7.10)

Messaging Manager does not comply.

esme_addr (4.7.11)

Messaging Manager complies.

esm_class (4.7.12)

Messaging Manager does not comply.

- Set Reply Path Bit (Bit 7) is stored in GenericSM::provideReplyPath.
- UDHI Bit (Bit 6) is recognised but not stored in GenericSM. It is used to stop alternate delivery of concatenated messages when no UDHI is present. Messaging Manager will not use esm_class to carry segmentation information if it is carried in TLVs.
- Bit 4 (Conversation Abort and manual/user ack) is ignored by Messaging Manager.
- See *submit_sm Syntax (4.2.1.1)* .

interface_version (4.7.13)

Messaging Manager complies.

message_id (4.7.14)

MMC complies.

message_state (4.7.15)

Messaging Manager complies.

Query messages are not interpreted by Messaging Manager, simply passed on, so Messaging Manager does not react to or alter this field.

no_unsuccess (4.7.16)

Messaging Manager complies.

number_of_dests (4.7.17)

Messaging Manager complies.

password (4.7.18)

Messaging Manager complies.

priority_flag (4.7.19)

Messaging Manager complies.

- Stored in `GenericMessage::priorityIndicator`.
- Messaging Manager uses the IS-95/ANSI-41 compliant priority mapping. The mapping from these values to ANSI-136 is described below (converting from left to right).

ANSI-136	ANSI-41	ANSI-136
Bulk	Normal	Normal
Normal	Interactive	Urgent
Urgent	Urgent	Urgent
Very urgent	Emergency	Very urgent

protocol_id (4.7.20)

Messaging Manager complies.

Value is stored in `GenericSM::protocolIdentifier`.

registered_delivery (4.7.21)

Messaging Manager does not comply.

Bits 0 and 1 are altered. All other bits are left alone. Outgoing messages have the same pattern. Messaging Manager does not compliantly set bit 1. See *submit_sm Syntax (4.2.1.1)*.

replace_if_present_flag (4.7.22)

Messaging Manager does not comply.

Value is not stored in `GenericSM`, so is essentially ignored by Messaging Manager, unless the message is copied to the outgoing plugin unaltered.

scheduled_delivery_time (4.7.23.1)

Messaging Manager does not comply.

`scheduled_delivery_time` is not stored in `GenericSM` and is ignored by Messaging Manager, unless `scheduled_delivery_time` is copied to the outgoing plugin unaltered. However, for cases where FDA may be relevant for the message, Messaging Manager recognises the presence of `scheduled_delivery_time`, bypasses FDA and passes `scheduled_delivery_time` to the SMSC for proper handling at the correct scheduled delivery time.

validity_period (4.7.23.2)

Messaging Manager complies.

final_date (4.7.23.3)

Messaging Manager complies.

Only used for queries not deciphered by Messaging Manager.

Absolute Time Format (4.7.23.4)

Messaging Manager does not comply.

- Tens of seconds are ignored by Messaging Manager.
- Messaging Manager stores absolute time internally as seconds since midnight UTC on 1 January 1970.

Relative Time Format (4.7.23.5)

Messaging Manager complies.

Messaging Manager stores relative time internally as a number of seconds to offset.

sequence_number (4.7.24)

Messaging Manager complies.

service_type (4.7.25)

Messaging Manager does not comply.

- For outgoing messages that are altered or generated, `service_type` is set to null.
- For incoming messages:
- `service_type` is used to set the teleservice and `allowAlternateDelivery` via the `teleserviceRoutingMap`.
- Implicit association of a function from a service type such as "replace if present" is not supported.

short_message (4.7.26)

Messaging Manager complies.

sm_default_msg_id (4.7.27)

Messaging Manager does not comply.

`sm_default_msg_id` is not stored in `GenericSM`. Messaging Manager ignores `sm_default_msg_id` unless it is copied, unmodified, to the outgoing plugin.

sm_length (4.7.28)

Messaging Manager complies.

This value is not stored internally in Messaging Manager, but calculated from the current message length. The value is correctly set to 0 if a message_payload TLV is being used.

source_addr (4.7.29)

Messaging Manager complies.

Stored in the originatingAddress field of GenericMessage. A value of NULL is not supported by Messaging Manager.

system_id (4.7.30)

Messaging Manager complies.

system_type (4.7.31)

Messaging Manager complies.

Set from the configuration option "systemType".

PDU TLV Definitions (4.8)

Position of TLVs in SMPP messages (4.8)

Messaging Manager complies.

TLV Tag (4.8.1)

Messaging Manager complies.

Messaging Manager uses some TLV tag values internally, mainly for holding values from the EmiProtocolHandler. These TLV values are listed in the following table.

Tag Name	Tag Value
vmesc_address	0x3680
num_septets	0x3681
tdma_priority	0x3682
message_modified	0x3683

TLV Length (4.8.2)

Messaging Manager complies.

TLV Value (4.8.3)

Messaging Manager complies.

TLV Definitions (4.8.4)

Messaging Manager does not comply.

Where a TLV definition is stated as "ignored" by Messaging Manager, the TLV will only be compliant if the message exits via the originating plugin. In this case unaltered TLVs will be preserved into the outgoing message.

additional_status_info_text (4.8.4.1)

Ignored

alert_on_message_delivery (4.8.4.2)

Ignored

billing_identification (4.8.4.3)

Ignored

broadcast_area_identifier, failed_broadcast_area_identifier (4.8.4.4)

Ignored

Broadcast Area Format types (4.8.4.4.1)

Ignored

broadcast_area_success (4.8.4.5)

Ignored

broadcast_content_type_info (4.8.4.6)

Ignored

broadcast_channel_indicator (4.8.4.7)

Ignored

broadcast_content_type (4.8.4.8)

Ignored

broadcast_end_time (4.8.4.9)

Ignored

broadcast_error_status (4.8.4.10)

Ignored

broadcast_frequency_interval (4.8.4.11)

Ignored

broadcast_message_class (4.8.4.12)

Ignored

broadcast_rep_num (4.8.4.13)

Ignored

broadcast_service_group (4.8.4.14)

Ignored

callback_num (4.8.4.15)

Ignored

callback_num_atag (4.8.4.16)

Ignored

callback_num_pres_ind (4.8.4.17)

Ignored

congestion_state (4.8.4.18)

Ignored

delivery_failure_reason (4.8.4.19)

Ignored

dest_addr_np_country (4.8.4.20)

Ignored

dest_addr_np_information (4.8.4.21)

Ignored

dest_addr_np_resolution (4.8.4.22)

Ignored

dest_addr_subunit (4.8.4.23)

Messaging Manager complies.

Stored in GenericSM::messageClass.

dest_bearer_type (4.8.4.24)

Ignored

dest_network_id (4.8.4.25)

Ignored

dest_network_type (4.8.4.26)

Messaging Manager does not comply.

Stored in GenericMessage::messageProtocol. Only the following values will be stored:

- 0x02 - ANSI-136/TDMA
- 0x03 - IS-95/CDMA
- Other values treated as GenericSM::UNKNOWN message protocol.

dest_node_id (4.8.4.27)

Ignored

dest_subaddress (4.8.4.28)

Ignored

dest_telematics_id (4.8.4.29)

Ignored

dest_port (4.8.4.30)

Ignored

display_time (4.8.4.31)

Ignored

dpf_result (4.8.4.32)

Ignored

its_reply_type (4.8.4.33)

Ignored

its_session_info (4.8.4.34)

Ignored

language_indicator (4.8.4.35)

Ignored

message_payload (4.8.4.36)

Messaging Manager complies.

Only used if message_size exceeds 255 characters.

message_state (4.8.4.37)

Messaging Manager does not comply.

Stored (as a bool) in GenericSM::deliverySucceeded. This field is set to true if the state is DELIVERED, and false for all other values or if the TLV is not present. Outgoing messages originating from other protocols will have a value of UNKNOWN.

For delivery receipts, the message_state may be set to DELIVERED or UNDELIVERED depending on the value of GenericSM::deliverySucceeded.

more_messages_to_send (4.8.4.38)

Ignored

ms_availability_status (4.8.4.39)

Ignored

ms_msg_wait_facilities (4.8.4.40)

Messaging Manager complies.

Stored in GenericSM::mwi (MessageWaitingIndicator) and GenericSM::mwt (MessageWaitingType).

ms_validity (4.8.4.41)

Messaging Manager does not comply.

- Stored in GenericSM:mwg (messageWaitingGroup).
- Messaging Manager complies for value 0 (Store Indefinitely).
- Value 3 (Display Only) used only for outbound messages.

network_error_code (4.8.4.42)

Ignored

number_of_messages (4.8.4.43)

Ignored

payload_type (4.8.4.44)

Ignored

privacy_indicator (4.8.4.45)

Ignored

qos_time_to_live (4.8.4.46)

Ignored

receipted_message_id (4.8.4.47)

Messaging Manager complies.

Stored in GenericSM::deliveryReceiptId. Set to blank if not present.

sar_msg_ref_num (4.8.4.48)

Messaging Manager complies.

Stored in GenericSM::segmentReference.

sar_segment_seqnum (4.8.4.49)

Messaging Manager complies.

Stored in GenericSM::segmentNumber.

sar_total_segments (4.8.4.50)

Messaging Manager complies.

Stored in GenericSM::segmentCount.

sc_interface_version (4.8.4.51)

Ignored

set_dpf (4.8.4.52)

Ignored

sms_signal (4.8.4.53)

Ignored

source_addr_subunit (4.8.4.54)

Ignored

source_bearer_type (4.8.4.55)

Ignored

source_network_id (4.8.4.56)

Messaging Manager complies.

- Stored in GenericSM::sourceLocationInformation, and triggered to ACS as location number.
- Only compatible with ESME Operator encoding.

source_network_type (4.8.4.57)

Ignored

source_node_id (4.8.4.58)

Ignored

source_port (4.8.4.59)

Ignored

source_subaddress (4.8.4.60)

Ignored

source_telematics_id (4.8.4.61)

Ignored

user_message_reference (4.8.4.62)

Messaging Manager complies.

Stored in GenericSM::messageReference. Placed in outgoing messages if messageReference is greater than zero.

user_response_code (4.8.4.63)

Ignored

ussd_service_op (4.8.4.64)

Ignored.