Open Geospatial Consortium

OGC®: Open GeoSMS Standard - Core

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The OpenGIS® Open GeoSMS standard defines an encoding for location enabling short messages (SMS).

ii.   Keywords

ogcdoc, sms, geosms

iii.   Preface

The Industrial Technology Research Institute (ITRI), Taiwan contributed this candidate standard to the OGC. This document is the "Core" or fundamental set of requirements for a geo enabled SMS of Open GeoSMS version 0.6.2 [OGC 09-142r6]. The Core part of Open GeoSMS standard specifies the format structure of an Open GeoSMS request and also includes the abstract conformance test suite in Annex A. Much more informative content is available in a companion document [OGC 09-142r6].

iv.   Document terms and definitions

This document uses the standard terms defined in Subclause 5.3 of [OGC 06-121r3], which is based on the ISO/IEC Directives, Part 2. Rules for the structure and drafting of International Standards. In particular, the word "shall" (not "must") is the verb form used to indicate a requirement to be strictly followed to conform to this standard.

v.   Submitting organizations

The following organizations submitted this document to the Open Geospatial Consortium Inc.

a) Industrial Technology Research Institute (ITRI)

b) Central Research Laboratory, Hitachi, Ltd.

c) GIS Center, Feng Chia University

vi.   Document contributor contact points

All questions regarding this document should be directed to the editor or the contributors:

CONTACT	COMPANY
Kuo-Yu slayer Chuang	Industrial Technology Research Institut
Mike Botts	University of Alabama in Huntsville
Nobuhiro Ishimaru	Central Research Laboratory, Hitachi, Ltd.
Lan-Kun Chung	GIS Center, Feng Chia University
Roland Wagner	Beuth Hochschule für Technik Berlin

1. Introduction

Short Message Service (**SMS**) [8] is the text communication service component of phone, web or mobile communication systems, using standardized communications protocols that allow the exchange of short text messages between fixed line or mobile phone devices.

The function of the OGC Open GeoSMS encoding standard is to facilitate communication of location content using the extended Short Message Service (SMS) [7] feature between different LBS (Location-Based Service) devices or applications for achieving interoperable communications while still maintaining human readability of the content. Namely, any application or service can simply leverage an extended SMS message using the Open GeoSMS format.

Based on the OGC WMS (Web Map Service) approach for expressing coordinates [2], the location information in Open GeoSMS uses latitude/longitude 2d expressed in decimal degree as defined in the WGS84 [3] coordinate reference system.

2. Conformance

Conformance and Interoperability for the Core part of the Open GeoSMS standard may be checked using all the relevant tests specified in Annex A (normative).

3. Normative references

The following normative documents contain provisions that, through reference in this text, constitute provisions of this document. For dated references, subsequent amendments to, revisions of, or any of these publications do not apply. For undated references, the latest edition of the normative document referred to applies.

[1] OGC 06-121r9, OGC Web Service Common Standard, version 2.0.0, April 2010.

[2] OGC 06-042, OpenGIS® Web Map Service Implementation Specification, version 1.3.0, 2006.

[3] WGS 84 Earth Gravitational Model website, available at <http://earth-info.nga.mil/GandG/wgs84/gravitymod/egm2008/egm08_wgs84.html>.

[4] T. Berners-Lee, R. Fielding, and L. Masinter, "Uniform Resource Identifiers (URI): Generic Syntax", IETF RFC 3986, January 2005, available at <http://www.ietf.org/rfc/rfc3986.txt>.

[5] R. Fielding , J. Gettys, J. Mogul, H. Frystyk, L. Masinter, P. Leach, and T. Berners-Lee, "Hypertext Transfer Protocol -- HTTP/1.1", IETF RFC 2616, June 1999, available at <http://www.ietf.org/rfc/rfc2616.txt>.

[6]   E. Rescorla, "HTTP over TLS", IETF RFC 2818, May 2000, available at

<http://www.ietf.org/rfc/rfc2818.txt>.

[7] Friedhelm Hillebrand, Finn Trosby, Kevin Holley, and Ian Harris," Short Message Service (SMS): The Creation of Personal Global Text Messaging," Wiley-Blackwell, 2010.

[8] Short Message Service standard. http://standards.iso.org/ittf/licence.html.

4. Terms and Definitions

For the purposes of this standard, the definitions specified in Clause 4 of the OWS Common Implementation Specification [1], in the Web Map Service Implementation Specification [2] shall apply. In addition, the following terms and definitions apply.

4.1. Open GeoSMS

An exchangeable short message format with the geospatial information for GPS and LBS applications

5. Open GeoSMS Format

The Open GeoSMS expression uses the following structure:

HTTP/HTTPS URI
Payload

5.1. Open GeoSMS Requirements Class

The first line of an Open GeoSMS message shall always be a valid http/https URI [5] [6] with the first parameter in the query string as the location value, and the postfix in the query string as "&GeoSMS". Detailed requirements are as follows:

5.1.1. Requirement 1: HTTP/HTTPS URI (Mandatory) [5] [6]

An Open GeoSMS message shall have *only* a valid http/https URI with the query string in the first line.

For interoperability, a valid http/https URI in conformance with [5] [6] is included in an Open GeoSMS to offer further web services. The http/https URI is supported in most web services and mobile devises. In an Open GeoSMS message, the major propose of an http/https URI is to provide various web services for users through the http/https URI linking to a map service, an advertisement service, or an additional service from the telecom provider. Therefore, an Open GeoSMS payload provides not only the geospatial information, but also supports possible extensions of the Open GeoSMS for new business models or web services in the future.

5.1.2. Requirement 2: Postfix String (Mandatory)

An Open GeoSMS message shall have a post-fixed string "&GeoSMS" in the http/https URI, which is distinct from the original http/https URI. For the extended implementation, the post-fixed string can be revised to "&GeoSMS=OP", where OP represents an operation description to identify a specific operation for a specific application. In addition, some optional extensions are specified in subclause of chapter 7.2 in the companion informative document for Open GeoSMS <eventually a URL here>.

5.1.3. Requirement 3: Location Parameter (Mandatory)

An open GeoSMS message shall have as the first query parameter in the query string of the valid http/https URI the location information in the format geo=latitude,longitude. The parameter name "geo" is recommended for this parameter, although it is not mandatory. The value of the latitude and longitude shall be described using the Decimal Degree format based on WGS84 [3] without the symbol of "°". The values of latitude and longitude are bounded by ±90° and ±180° respectively. Positive latitudes are north of the equator, negative latitudes are south of the equator. Positive longitudes are east of the Prime Meridian, negative longitudes are west of the Prime Meridian. Latitude and longitude are expressed in that sequence, namely latitude before longitude. For example, the location parameter may be shown as "geo=23.9572,120.6860".

5.2. Optional

5.2.1. Optional 1: Payload

An Open GeoSMS message may have free style text in an SMS as the payload, which shall be lines following the valid http/https URI in the first line.

6. Example

Sam has a flat tire near an unknown village. He cannot describe where he is and call for towing service. Luckily, he installed a GeoSMS service application on his phone and that application sends out his location directly to a call center. The corresponding Open GeoSMS should be:

http://maps.geosms.cc/showmap?geo=23.9572,120.6860&GeoSMS
I NEED TOWING SERVICE NOW

Sam gets a confirmation call immediately from his insurance company and the tow truck arrived in time before dark..

Annex A. Abstract Test Suite and Conformance Testing (normative)

Specific conformance tests for an Open GeoSMS need to be defined on the concrete service level in order to ensure full interoperability. Thus, the abstract test suite defined herein only ensures general interoperability. A Core part of Open GeoSMS implementation shall satisfy the following characteristics to be minimally conformant with this encoding standard.

A.1. Open GeoSMS Appropriateness

   a) Test Purpose: To verify that the first line of an SMS conforms to a valid http/https URI with the postfix as "&GeoSMS" and the valid location value for the first parameter.

   b) Test Method: To verify that the first line of an SMS shall be a valid http/https URI that is conformant with Requirement 1, 2 and 3 in chapter 5.1.

   c) Test Example: The following example conforms to a valid Open GeoSMS.

   http://maps.geosms.cc/showmap?geo=23.9572,120.6860&GeoSMS

   d) Reference: Subclause of chapter 5.1 according to Requirement 1, 2 and 3.

   e) Test Type: Conformance