
# SMS Connectivity – Gateway Access Using SMPP Protocol

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Access using the Short Message Peer to Peer (SMPP) protocol is available under HSL's Advanced Services allowing an application to communicate with Short Message Service Centres (SMSCs) and Virtual Mobile platforms to perform one-way and two-way messaging between the application and SMS capable mobile devices. Such mobile devices include GSM mobile telephones, GSM modems and other devices on supported networks.

## *SMPP Interface*

The SMPP protocol allows a client's applications to access HSL's systems to send and/or receive SMS. The application should implement the SMPP protocol (version 3.3 or 3.4) to communicate with HSL's systems.

SMPP SDK and toolkits are available from a number of sources for Java, C/C++, Perl, VB and other languages on various operating systems.

One such SDK is the SMPP Developers Toolkit™ and is available from LogicaCMG. Further information on this toolkit is available from LogicaCMG at http://www.logicacmg.com/.

Other toolkits and SMPP capable applications are available from 3rd party vendors and HSL can provide a list of these on request.

## *Service Overview*

Through the use of SMPP and HSL's systems, SMS containing simple text information and complex binary messages can be sent between applications and mobile devices. To allow this the application links into HSL's systems over a suitable link such as the Internet, a direct leased line, X.25 or ISDN. The transport layer protocol used with all links is IP.

Our multi-site Internet links allow clients to connect into our systems over IP and are available to allow significant levels of SMS traffic. Multiple sites operated by HSL ensure that service is always available to our clients and their applications. By employing numerous SMSC connections we are able to handle high volumes of traffic reliably and ensure that SMS delivery throughput remains high and delivery latency low even in high-load situations.

Our services are monitored 24x7 with around the clock priority telephone support to engineering staff. The HSL SMPP services are operated to provide high availability and reliability to the customer.

Service level agreements are available on all service levels covering service availability, daily throughput, support and reporting guarantees.

## *Short Message Service*

The Short Message Service (SMS) is part of the GSM specification and allows messages to be sent to and from mobile devices on GSM mobile networks throughout the world. A single short message can contain up to 160 characters and comprise of words, numbers or an alphanumeric combination. Short messages can be received simultaneously with voice, data and fax calls. SMS also provides confirmation that a short message has been delivered to its destination. Non-textual short messages can also be sent that carry 8-bit binary data. Messages comprising of Unicode character sets which include Arabic and Chinese characters can also be carried in SMS.

SMS is a store and forward service where a short message is sent via a Short Message Service Centre (SMSC). An advantage of this is that the destination mobile device does not have to be on the network at the time when the message is sent. If a mobile device were not available for a delivery the message it typically delivered when the mobile device became available. Delivery of a short message takes a matter of a few seconds from SMSC to mobile device.

SMS Messages can be up to 140 octets or 160 characters in length and can carry information coded in different ways. The most common 'coding' scheme is the GSM default alphabet. This allows a simplified text alphabet to be coded into 7-bits per character.

More advanced applications will typically use 8-bit data where the SMSC makes no assumptions on the coding scheme and allows applications to use the 140 octets as they wish.

Each short message has a number of standard header elements, in addition to the 140 octet user data, which dictate the behaviour of the network and associated applications when handling the message. Examples are:

1. Validity period – assuming the message has not already been delivered, specifies how long the message remains valid before the SMSC will delete it;
2. Service Centre Time Stamp – allows the SMSC/users/applications to track and control individual messages;
3. Protocol Identifier (PID) – indicates certain types of telematic interworking and message routing within device;
4. Data Coding Scheme (DCS) – indicates how the data is encoded within the message;
5. Source and Destination address of the message;
6. Address of the SMSC that handles the message.

## *Technical*

The SMPP interface that HSL provides conforms to the SMPP protocol specifications, v3.3 and v3.4.

SMPP is a binary-based protocol that requires an external application to initiate a login (or 'bind') sequence with password-based authentication before accepting any messaging commands from the external system. In addition to basic sending and receiving of SMS messages the customer application is also provided with features such as:

1. Querying the status of messages submitted to the SMSC;
2. Cancelling messages already submitted to the SMSC;
3. Replacing messages already submitted to the SMSC (either replacing in SMSC or in mobile);
4. Requesting Delivery Receipts when messages reaches a final state;
5. Requesting immediate notification of first delivery attempt.

When using mobile-to-land messaging, including delivery receipt requests via the external application, the system is required to provide an "always connected" termination, i.e. must be permanently 'bound' in. This allows messages to be delivered as soon as these are received by the SMSC or Virtual Mobile, avoiding message queue build-up within SMSCs.

## About HSL

Hay Systems Limited (HSL) provides corporate and SME clients with SMS gateway access to wireless networks for global messaging. HSL focuses on the core task of providing SMS connectivity and transit services to clients while increasing the depth of service and range of methods by which clients can integrate with our systems. Based in Edinburgh, Scotland, HSL is known as a highly capable and reliable provider of messaging services to mobile networks, financial institutions, wireless software providers and multinational companies.

HSL is an active member of the SMS Forum (previously the SMPP Forum). The SMS Forum is responsible for the development of the SMPP specification.

## Specification

| | |
|---|---|
| Interfacing Protocol | Short Message Peer to Peer (SMPP) |
| Transport Protocol | TCP/IP |
| Access Link | Internet (IP)<br>Leased line<br>ISDN |
| Client requirements | Application capable of communicating using SMPP v3.3 or v3.4 protocol |
| Message capacity<br><br>(per day) | Intro : 50<br>Entry : 250<br>Contact : 2,500<br>Base : 25,000<br>Corporate: 250,000 |
| MO/MT throughput | 10 – 100 SMS/sec*<br>depending on service level<br><br>* MO performance dependent on originating network |

## Coverage

Networks in countries in the UK, throughout Europe and the Rest of the World are supported through HSL's Advanced Services. Please see the main Advanced Services document for further details:

http://www.hslsms.com/information/

## Pricing

The prices below reflect access to the service via Internet.

| **Intro Level** | |
|---|---|
| SMS capacity of up to 50 SMS messages per day. VPN not available. VPN not available | |
| Set-up charge | Nil |
| Service charge (monthly) | £25 |

| **Entry Level** | |
|---|---|
| SMS capacity of up to 250 SMS messages per day. VPN not available. VPN not available | |
| Set-up charge | £75 |
| Service charge (monthly) | £30 |

| **Contact Level** | |
|---|---|
| SMS capacity of up to 2,500 SMS messages per day. VPN not available. VPN not available | |
| Set-up charge | £250 |
| Service charge (monthly) | £60 |

| **Base Level** | |
|---|---|
| SMS capacity of up to 25,000 SMS messages per day. IPSec VPN available (3DES). | |
| Set-up charge | £725 |
| Service charge (monthly) | £93 |

| **Corporate Level** | |
|---|---|
| SMS capacity of up to 250,000 SMS messages per day. IPSec VPN available (3DES). | |
| Set-up charge | £1,250 |
| Service charge (monthly) | £150 |

Current message pricing is available online at http://www.hslsms.com/information/.

All prices are subject to UK VAT where applicable and are correct as of 1st January 2005.

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