

m-Agent SMS Gateway

Application Programming Interface Version 2.7

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<http://www.ionnex.com/>
<http://premium.ionnex.com/>
<http://bulk.sms2.info/>

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Revision History

Version	Author(s)	Date	Description
1.0	HY Sia	2003-03-11	m-Agent Interactive & Bulk SMS API supporting Text SMS
1.1	HY Sia	2003-03-30	UCS2 / Unicode SMS support
1.2	HY Sia	2003-04-01	Nokia Smart Messaging Support
1.3	HY Sia	2003-04-12	EMS Messaging Support
1.4	HY Sia	2003-05-18	WAP Push message support
1.5	HY Sia	2003-07-03	Added SMS delivery via shortcode
2.0	HY Sia	2003-12-15	M-Agent .Net version 2.0 released, fundamental change in API parameters
2.1	HY Sia	2004-01-27	Fixed documentation syntax error for Premium MT SMS sending
2.2	HY Sia	2004-02-16	Added Interactive SMS Feature without HTTP call & documentation syntax/typo error fix
2.3	HY Sia	2004-03-10	Discontinue IP 202.187.88.90 and change all ports number to 8001.
2.4	HY Sia	2004-08-03	Improve backend performance. Added new shortcode 36989. Separate Bulk SMS sending into sendbulk.aspx. Minor change of parameters in Premium SMS
2.5	HY Sia	2005-09-01	DN access via HTTP, Reserved Keyword (REG, ON, STOP, BATAL) MO SMS HTTP POST to CP changes, more content type support, Plain Text Output only support text-based SMS

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Version	Author(s)	Date	Description
2.6	HY Sia	2007-10-01	Compliance to Maxis MPG, Digi MCMC Control and Celcom PCM control. Added additional parameter subsID for Digi MSISDN. Discontinue plain text output for MT SMS

Technical Overview

Description	Details	Remark
Server IP	202.171.46.9 (primary IP) 202.171.46.7 (Secondary IP)	
Server URL	http://gateway.ionnex.com:8001/ http://gateway2.ionnex.com:8001/	CP may also use direct IP if DNS failed
Server Path	/sendsms.aspx (Premium SMS) /sendbulk.aspx (Bulk SMS) /dnretriever.aspx (To retrieve Premium SMS Delivery Notification)	New dnretriever.aspx to allow CPs to access the DN report via their own application
Server Port	TCP Port 8001	
Web admin	http://premium.ionnex.com/ (Premium SMS) http://bulk.sms2.info/ (Bulk SMS Gateway)	Customer can access web-based admin to monitor traffic and setting
Protocol	HTTP version 1.1 POST or GET	

Glossary

SMSC	Short Message Service Center responsible for delivering SMS to the end user
MO SMS	Mobile Originated SMS (send from Phone)
MT SMS	Mobile Terminated SMS (send to Phone)
CP	Content Provider, user of m-Agent Premium
WAP	Wireless Access Protocol
EWIG	External WAP Intermediate Gateway (Maxis specific)
MSISDN	Mobile Subscriber ISDN Number (Mobile Phone No with International Prefix)
CPA WAP	WAP Gateway (Digi Specific)
CMP WAP	WAP Gateway (Celcom Specific)
MPG	Maxis Preventive Gateway
PCM	Policy Control Module (Celcom)

SMS Control for Spam and Invalid Charging

With the introduction of a series of rules from Malaysian Communication and Multimedia Commission (MCMC), the 3 operators in Malaysia will be introducing new system by phases

- Maxis – Maxis Preventive Gateway (MPG)
- Digi – Digi CPA MCMC Enhancements
- Celcom – Celcom Policy Control Module (PCM)

With the above policy implemented, CP is expected to register all their subscription SMS keyword into their respective system, except Digi. Thus, CP can only launch services when their keyword/service is approved by relevant operators.

CP is reminded to complete their Service Notification Form to Ionnex at least 7 working days before commencing their services. Failure to do so will result in Charging Failure. It is also noted that whenever user send in STOP or BATAL command to shortcode, the subscriber MSISDN will automatically become blacklisted MSISDN, whereby CP will be unable to send SMS and charge. CP is encouraged to filter their subscriber database to 'clean up' their database.

HTTP POST Parameters of MO SMS to CP

Parameter for MO to CP

Parameter	Description
from	Mobile user phone number
text	Content send by mobile user
msgid	A MO ID provide by telco
shortcode	Shortcode number of which the MO is sent to
rkey (Please see page 9 for more info on rKey)	The reserved keyword field. CPs can capture the value whenever user send in MO SMS with reserved keywords (REG, ON, STOP and BATAL). The keyword is essential to comply with Telco Guideline on SMS Subscription service.
subsID	Digi only. The ID for each MSISDN. CP must store this ID, and passed into HTTP POST MT SMS parameters when sending to Digi MSISDN
telcoid	For MNP

To accept incoming SMS CPs will need to provide:

- CP service keyword(s) to identify the service when a MO SMS is received on a shortcode. It must be at least 3 characters. Special characters, such as *, -, + and reserved keywords REG, ON, STOP BATAL is not permitted.
- CP IP address (optional, for security purpose).
- The URL to CP application, which will accept the end-user’s request back to CP application server. CP application must support the above Parameter for MO to CP.

The service keyword and URL of application can be easily managed by logging into M-Agent Premium Admin Panel (<http://premium.ionnex.com>) under Manage Keyword tab.

For e.g. when a user sends in a MO SMS “REG LUCK”, Ionnex will post

<http://www.CPsURL.com/xyz.php?from=60153456789&text=LUCK&msgID=123456&rkey=REG&subsID=HhWHAknEJi+wsvvEGz1DbA==&telco=1>

Once the parameter is sent to CP preferred URL, CP can use the following method to reply back to user with OR without charges:

1. HTTP POST/GET MT SMS Output

CP Server will use the available HTTP Parameter to post the premium/bulk MT SMS to end user. This is the PREFERRED method.

HTTP MT POST Parameters (for Bulk SMS & Premium SMS)

For bulk SMS, please send to <http://gateway.ionnex.com:8001/sendbulk.aspx>

For premium SMS, please send to <http://gateway.ionnex.com:8001/sendsms.aspx>

Parameters	Description
user (alphanumeric)	User Name
pass (alphanumeric)	Password
to (Numeric)	Destination Phone in MSISDN (for eg. 60128889988).
msg (alphanumeric)	Message Body or Content (must be URL encoded).
type (Numeric)	Type of Message (see listing below)
charge (Numeric)	Only For Premium SMS User To set charges. Price range from 30 sen to 1000 sen (in 50 sen steps). Shortcode dependent
sp (Numeric)	Only for Premium SMS User To set shortcode to use for Premium MT push. Please only use the assigned shortcode number.
recID (Numeric)	Only for Premium SMS User Keyword/Service ID. The ID can be managed via M-Agent Premium Admin Panel.
moid (Numeric)	Only for Premium SMS For IOD services only. Use the same msgid passed in MO
groupID (Numeric)	Only for Premium SMS (Please see page 9 for more info) Message GroupID. The ID can be managed via M-Agent Premium Admin Panel. The groupID is also essential when CP need to RESEND the SMS to MSISDN failed to receive MT. The groupID will act as a session identifier. If no grouping is necessary, just enter it as value 0
subsID (String)	Only for Digi Premium SMS Subscriber ID. The ID must be sent into server whenever CP wish to send Premium SMS to a Digi MSISDN
server (Numeric)	Only For Bulk SMS User Choose Server for SMS routing. Default is 3
brand (alphanumeric)	Only For Bulk SMS User Brand/Sender TPOA Information (Max 11 Character)
text (alphanumeric)	Optional: For Picture Messages SMS, use following msg = Picture Hex Code text = Message Attached
url (alphanumeric)	Optional: For WAP Push Service SMS: Specify the URL of the message
telcoid	Only for Premium SMS

Message type Parameter Option

Type	Description
1	Text SMS
2 *	Nokia Ringtone – Convert Hex Code Ringtone (Without Header)
3 *	Nokia Operator Logo – Convert Hex Code Logo (Without Header)
4 *	Nokia Caller Group ID – Convert Hex Code Icon (Without Header)

5 *	Nokia Picture Message – Convert Hex Code Picture (Without Header)
6	Chinese B5 – Convert to UCS2
7	Chinese GB – Convert to UCS2
8	E-Melody / Motorola –Text E Melody Format (url encoded)
9	I-Melody – Text I Melody Format (url encoded)
10	Wap Push – msg = Header/Message, url = WAP URL
11	Binary SMS – Hex SMS, need to attach the correct TP Header
The message type of value 12 and above is meant for Rich Content under Maxis EWIG/MSDP or Digi CPA WAP or Celcom CMP WAP. It is meant for For Premium SMS	
12	Java Game
13	Polyphonic Ringtone / True Tone
14	WallPaper (jpg/gif)
15	Logo (jpg/gif)
16	Graphic or Vide (jpg/gif/3gp/rm)
17	Screensaver
18	Mono Ringtone (for downloading via WAP Site)
19	Themes (Symbian Themes)

All data post to m-Agent must be properly URL Encoded

* All Nokia Smart Messaging Content must be conformed to Nokia Smart Messaging Version 3.0

HTTP Response Parameter

When a SMS is posted into m-Agent, in the same synchronous HTTP Call, m-Agent server will return the following. Please note the HTTP Response Parameter is only valid for HTTP MT POST method. Plain Text MT method does not have any response.

Status	Description
Success Format	<IONNEX><RESULT>SUCCESS</RESULT> <REPORTID>848a930d-3bb0-4a54-b260-fac6dfbd66eb1 </REPORTID> <SPLIT>1<SPLIT><CREDIT>1</CREDIT></IONNEX>
Fail Format (please see below for the list of error code)	<IONNEX>< RESULT >FAIL</ RESULT > <ERRORID>0001</ERRORID> <DESC>USER NAME OR PASSWORD EMPTY</DESC> </IONNEX>

Error Code and Description

Error Code	Description
0001	EMPTY USER NAME OR PASSWORD
0002	NOT AUTHENTICATED
0003	MESSAGE OR PHONE OR TYPE EMPTY
0005	SEND TEXT ERROR - POST
0006	INVALID TYPE
0007	INVALID GUID
0008	INVALID CHARGE FIELD
0011	URL EMPTY
0012	INVALID RECEIVE OR GROUP ID
0013	INVALID MSISDN
0013	INVALID CHARGE MSISDN

0014	INVALID NETWORK OPERATOR
0014	INVALID CHARGE NETWORK OPERATOR
0015	SHORT CODE NOT ALLOWED
0016	SHORT CODE DOES NOT SUPPORT THIS TELCO
0017	SERVER ERROR. PLEASE CONTACT IONNEX

HTTP POST/GET Check Delivery Notification Status

For the DN status of each SMS, send to

<http://gateway.ionnex.com:8001/dnretriever.aspx>

Parameters	Description
phone	Phone number , e.g. 60161234567
recid	Keyword/Service ID, e.g. 123
GUID	ReportID getting from MT push, e.g. 39e1abe5-71a3-44c8-8a31-5dde0b5570a3

DN Status will follow the status that given by TELCO, common status will be,

Status	Description
1	Success Delivered to Mobile User
-1	DN is not available yet from TELCO

For e.g.

<IONNEX><STATUS>-1</STATUS><REPORTID>39e1abe5-71a3-44c8-8a31-5dde0b5570a31</REPORTID></IONNEX>

Delivery Notification Explanation

Maxis

Description	Status
MT delivered successfully <i>(MT delivered and Charged in case of Hot Billing)</i>	1
Failed to deliver MT	2
Insufficient Balance	11
Billing gateway errors	12
LDAP errors (Invalid/Inactive MSISDN)	21
Barred MSISDN	22
Suspended MSISDN	23

Celcom

Description	Status
MT delivered successfully	1 or SUCCESS
Failed to deliver MT	2
Missing param or invalid type field	PCM400
Invalid Pricecode	PCM402
Invalid Service	PCM403
Invalid Subscriber	PCM407 or InvalidSubscriber

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Internal Server Error	PCM500
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DiGi *

Description	Status
MT delivered successfully	1
Failed Delivery Notification	152
Fail to access database	153

** Other DiGi status is inaccessible from DN report as the information is conveyed to Ionnex gateway during the delivery to DiGi SMSC.*

Example HTTP GET Format

Please note all the data sent to Ionnex server **MUST** be properly URL Encoded. CP can use either HTTP POST (preferred method) or HTTP GET.

Bulk Text SMS with Server=3

<http://gateway.ionnex.com:8001/sendbulk.aspx?user=test&pass=test123&to=60121234567&server=1&type=1&brand=ionnex&msg=HelloTesting>

Bulk Hex Code Ringtone/Logo/Icon/Picture Message

<http://gateway.ionnex.com:8001/sendbulk.aspx?user=test&pass=test123&to=60121234567&server=1&type=2&brand=ionnex&msg=HexCodeHere>

Type = 2,3,4,5,11.

Premium MT Text SMS

<http://gateway.ionnex.com:8001/sendsms.aspx?user=test&pass=test123&to=60121234567&type=1&charge=30&msg=TestTesT&recID=1&groupID=1&sp=36989&subsid=HhWHAKnEJi+vsvvEGz1DbA==\&telcoid=1&moid=123456>

Wap Push EWIG for Java Games

<http://gateway.ionnex.com:8001/sendsms.aspx?user=test&pass=test123&to=60121234567&server=1&type=12&brand=ionnex&msg=WapPush&url=http://wap.games.com>

Please remember to include **http://** in the URL parameter for WAP PUSH

Note on GroupID

GroupID is an optional parameter used to identify a group of SMS. CP can treat groupID as a group of CP user group (for e.g. Regular, Premium, VIP type of user) or as a session identifier of CP SMS Broadcast.

For e.g. CP sends SMS to 1,000 subscribers on 31/08/2005, after 24 hours, there is 20% of subscriber FAILED to receive such SMS due to various gateway/billing reasons. CP choose to RESEND the SMS to these 20% subscribers. CP may resend the SMS by entering the service keyword, date and the groupID that identify a particular broadcast session. Ionnex is also committed to provide Application Programming Interface for this function in next version.

CP must use numeric data type for groupID. Ionnex recommends 5 - 10 digits as the unique identifier.

Note on rKey

The reserved keyword REG, ON, STOP and BATAL will automatically search for CP service keyword if it is a Subscription type of service. For e.g. CP can define the service keyword as LUCK, when a user sends in "REG LUCK" or just plain "LUCK", both MO SMS will automatically pointed to CP application URL. When a user accesses CP application/service with Reserved Keyword, the **rKey** will contain "REG" and **text** parameter will only contain "LUCK". If no reserved keyword is detected, the rKey will have NULL value.

However, for "STOP LUCK" or "BATAL LUCK", **rKey** will contain "STOP" or "BATAL" and **text** parameter will contain "STOP LUCK" or "BATAL LUCK". In the next version, Ionnex will change it to similar fashion of "REG" or "ON". Ionnex decided this method to ensure backward compatibility with CP application. CP should change their coding to accept universal "STOP" or "BATAL" under rKey parameter before 1st November 2005.