MACROKIOSK

BULK SMS
Product Paper
July 2020 | Version 4.7

Preface

The following document is a product paper of **MACROKIOSK**'s Bulk SMS Solution which is only open for internal viewing.

The purpose of this product paper is to inform its readers about the technical features and benefits of Bulk SMS as well as educational material to the sales and marketing division of **MACROKIOSK**.

Besides just the benefits, the product paper will also explore some of the technical limitations of Bulk SMS as well as some frequently asked questions regarding Bulk SMS.

Please take note that no part of this document may be disclosed orally, in writing, or reproduced in any form, language and/or distributed to third parties without prior consent from **MACROKIOSK**.

Product Changelog

Version	Date	Areas of Amendments	Summary of Changes
2.34	31/5/2016	All Sections	▪ MES GUI changed to BULK SMS. ▪ Credit changed to value / currency.
2.35	01/08/2016	Section 5.3	▪ Sender ID info amended for China.
2.36	15/12/2016	Section 6.2.1	▪ Added prepaid MAC known issues.
2.37	13/02/2017	Section 6.2.1	▪ Network Query name updated to SPOTTER.
		Section 6.2.2	▪ Added new market rule.
		Section 6.2.5	▪ Added new telco / IG rule. ▪ Correction on incomplete rule. ▪ Rearranged information for clearer description.
3.0	16/06/2017	All Sections	▪ Editorial Revision
3.1	30/6/2017	Section 5.3	▪ Updated Vietnam regulations.
3.2	17/7/2017	Section 5.2	▪ Updated Thailand long code
3.3	4/8/2017	Section 5.2	▪ Updated Indonesia long code
		Section 5.3	▪ Sender ID info amended for China. ▪ Added Private Signature Registration
		Section 6.1	▪ Added limitation for Private Signature.
		Section 7.4	▪ Updated China regulations.
3.4	24/11/2017	Section 4.3	▪ Added YES information.

		Section 5.3	▪ Sender ID info amended for Indonesia and Malaysia. ▪ Added Macau premium class
		Section 7.1	▪ Updated Malaysia (Maxis & Celcom) regulations.
		Section 7.8	▪ Added Turkey regulations.
3.5	25/01/2018	Section 5.2	▪ Updated Vietnam long code
3.6	16/3/2018	Section 5.3	▪ Removed minimal purchase of TELKOMSEL on Indonesia premium class ▪ Added remarks for Indonesia economy class
3.7	12/4/2018	Section 5.3	▪ Updated default sender for Macau premium class ▪ Updated new feature supported by Philippines premium class, Unicode supported ▪ Added Hong Kong premium class
3.8	22/5/2018	Section 5.3	▪ Added new regulation for Indonesia premium class-Hutchison
3.9	31/5/018	Section 5.3	▪ Added new regulation for Malaysia premium class-Digi. ▪ Added supported features for India
		Section 7.9	▪ Added regulation for India
4.0	29/10/2018	Section 5.3	▪ Updated type of sender ID for Vietnam standard class
		Section 5.4	▪ Elaborated the delivery notifications part
		Section 7.1	▪ Added regulation for Malaysia Digi
4.1	2/1/2019	Section 4.3	▪ Added concatenate SMS regulation for all Vietnam Telcos.

4.2	29/1/2019	Section 5.3	▪ Update new regulation on Telkomsel premium class
4.3	26/2/2019	Section 5.3	▪ Update new regulation on XL premium class
4.4	17/1/2020	Section 5.3	▪ Update on Indonesia telco regulation. ▪ Update on Vietnam regulation
		Section 7.2	▪ Update special symbol characters limitation for Indonesia Smartfren telco.
		Section 7.7	▪ Update on Vietnam regulation.
4.5	21/2/2020	Section 5.3	▪ Add in Myanmar premium class
4.6	12/5/2020	Section 4.1 Section 4.2.1 Section 4.3 Section 4.3.2 Section 5.3	▪ Update Malaysia premium class, price point is changed to RM0
4.7	21/7/2020	Section 5.3 Section 6.0 Section 7.1 Section 7.4	▪ Remove China private signature ▪ Update system limitation ▪ Update Malaysia (Umobile) regulation

Table of Contents

Section 1.0 – Introduction

1.1 – Getting The Word Out

Thanks to the advancement of civilization, today's business world is one that's constantly competitive. An innovative breakthrough product could dominate the market during its initial launch but given a year or a few months, could be easily swarmed with competition thanks to imitators that recently joined the industry.

This makes standing out and remaining relevant in today's fast changing and extremely disruptive market. For this very reason alone, numerous business conglomerates are investing an absurd amount of time and resources in advertising.

Even with a massive marketing budget, there are often times information such as regional promotions, product updates, or service maintenance issues that organizations would like to communicate to their customers which isn't suited to traditional marketing.

As such, there is undoubtedly an urgent need for a platform in which organizations can engage with their audiences and customers on a large scale yet, delivered in a manner that feels personal.

1.2 – Introducing Bulk SMS

As the name suggests, BULK SMS serves as a bulk messaging service, empowering its users with the ability to broadcast large volumes of SMS messages to the user's potential customers at a relatively low cost.

Messages that be delivered via BULK SMS supports text and multimedia content. Additionally, BULK SMS also supports one and two-way communication, allowing organizations to just send out a message but actively engage with their customers.

Being part of CONSOLE's core features, BULK SMS is also supported by CONSOLE's other additional supplementary features such as reporting analytics and contact and group listings to provide added value to its users.

1.3 – Benefits of Bulk SMS

MACROKIOSK's BULK SMS is a comprehensive bulk messaging system featuring cutting-edge technology to the users. The unique advantages of BULK SMS are as follows:

Cost Effective – Compared to traditional advertising, BULK SMS is an effective and cost saving way for clients to notify their users of any urgent issues or to advertise their products or services.

Immediate and direct Approach – Through BULK SMS, users can easily engage with their customers at any time and regardless of location, directly to their mobile phones.

Personalization – Additionally, messages can be personalized to include information important to any group or individual such as name or OTP (one-time-password).

Global Network – Connected to a global network, users can instantly reach mobile subscribers, regardless of which corner of the world they may be.

Section 2.0 – BULK SMS Service Flow

Be it through CONSOLE (GUI) or API, there are two service flows for BULK SMS broadcasts which are as follows:

One Way Broadcasts – Mobile Users not charged. Example: Advertisements / Promotional Broadcasts / Announcements	**Two Way Broadcasts** – Mobile Users subject to transportation costs from Telco. Example: Voting / Contest Entries / Quizzes

Client   **etracker**   **Telco**

Legend:
→ One Way
← Two Way

Mobile User
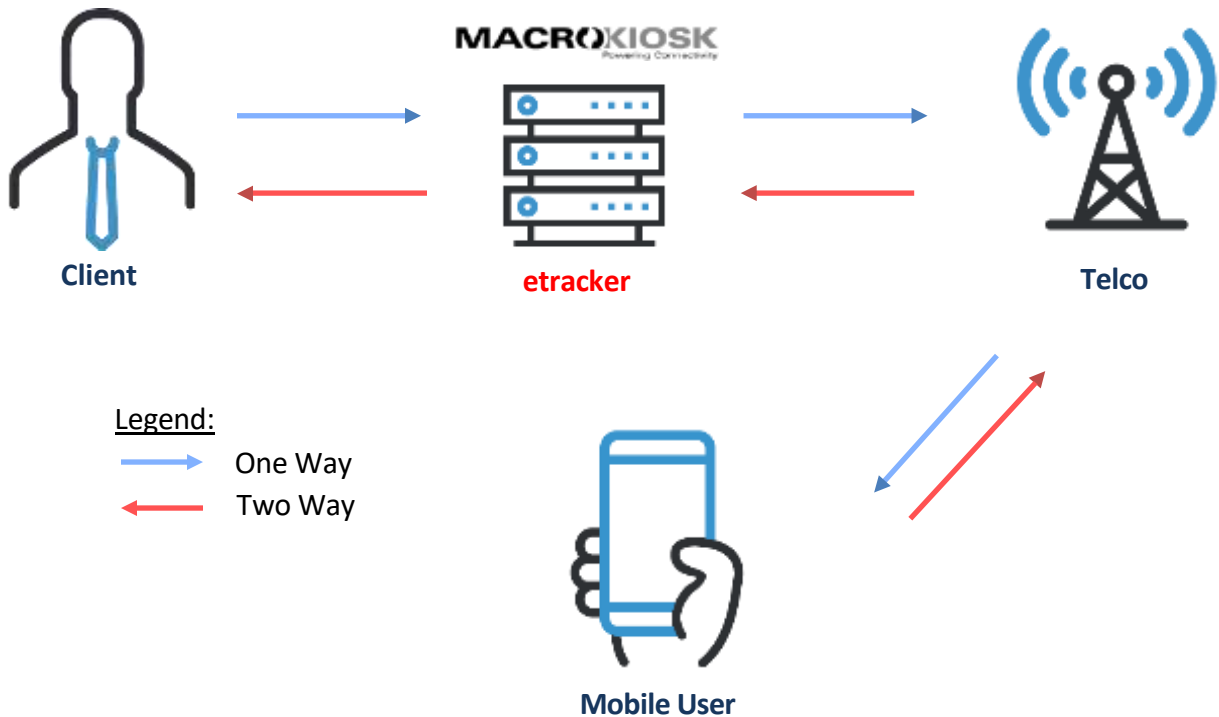
Section 3.0 – BULK SMS Supporting Features

The following table lists the supporting features available for solely BULK SMS. For a comprehensive breakdown of CONSOLE or BULK MMS's features, please refer to the CONSOLE or BULK MMS product paper respectively.

Feature	Description
Multiple application protocol	▪ Supports HTTP / HTTPS /SMPP request submission.
Multiple web service access protocols	▪ Supports REST / SOAP web service access protocols.
Postpaid and Prepaid User Accounts	▪ Users can opt to have either prepaid or postpaid accounts for their message broadcasts. ▪ Postpaid users will be billed monthly by the number of messages sent. ▪ Prepaid users are assigned a specific amount of credit to broadcast their messages which can be topped up when exhausted.
One-way Messaging	▪ Allows clients to broadcast messages (MT) to their targeted audience such as promotional messages.
Two-way Messaging	▪ Allows clients to obtain feedback or participation response (MO) from mobile users via mobile phones. ▪ Supports two types of MO formats. - MO format with space between keyword and variable - MO format without space between keyword and variable. **Note:** Clients are required to get approval from Celcom prior to using 6 series shortcodes. *Only applicable for Thailand. Please refer to MO – Shortcode / Longcode (2 way Messaging) Notes
Broadcast Message Type	▪ Roman (ASCII) ▪ Unicode ▪ Symbols **Note:** Output display is phone dependent.

Sender ID	Supports the following types of Sender ID (Telco dependent). ▪ Fixed Sender ID ▪ Dynamic Sender ID (either Free Input or Random Sender ID) Shortcode ▪ Registered Sender ID **Note:** All these Sender ID types can be in numeric, alphabets or alphanumeric format.
SMS Concatenation	▪ For long messages that exceed the character limit, clients can send concatenated SMS which are multiple SMS merged together. ▪ When received, mobile subscribers will only read the message as one long SMS.
Mobile Number Validation (SPOTTER)	▪ Clients can determine the MSISDN statuses before messages are broadcasted to mobile subscribers. ▪ This prevents clients from broadcasting messages to inactive mobile subscribers. **Note:** This is an add-on feature, which requires subscription.
Delivery Notifications	▪ Clients will be able to receive Notification statuses for each message sent to Telcos (Please refer to *Delivery Notification (DN) Statuses by Macro Kiosk).* ▪ Real time DN option is enabled for BULK SMS access. For API access, it can be enabled by request.
Mobile Number Portability	▪ Supports the ability to reach mobile users who have switched mobile network, yet retain their phone numbers. ▪ This allows clients to keep track of their loyal customers, even after they've ported to different mobile networks. **Note:** This feature can be enabled by request. This feature is only applicable for Malaysian Mobile number.

Section 4.0 – SMS Maximum Characters

4.1 – Standard Length Per SMS

General

1. Most countries support a standard length for each SMS, with a maximum of 160 (Roman) or 70 (Unicode) characters.

2. Please note that Malaysia imposes a mandatory 4 characters count for price code indication in front of all SMS. Therefore the standard length of SMS for Malaysia is 156 (Roman) and 66 (Unicode) characters

3. Additionally, by clicking the 'Enter' key to start a new row, it would take up 2-character counts in BULK SMS.

4. Symbols ^ { } \ [~] | € will be counted as 2 characters for Roman messages and 1 character for Unicode Messages.

5. Character conversion

   a) Symbol € will be auto converted to character E and displayed as E at the receiver's end.

   b) Symbol ` will be auto converted to symbol 'and displayed as ' at the receiver's end.

4.2 – General SMS (Non-Concatenation)

Roman

Character Length

1st SMS: 1st charge	2nd SMS: 2nd charge	3rd SMS
0 to 160	161 to 320	321 to 480
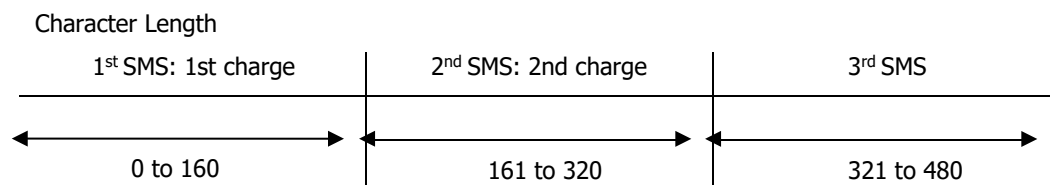
Figure 4.1.2-1: Non-concatenated Roman Messages

Unicode

Character Length

1st SMS: 1st charge	2nd SMS: 2nd charge	3rd SMS: 3rd charge
0 to 70	71 to 140	141 to 210
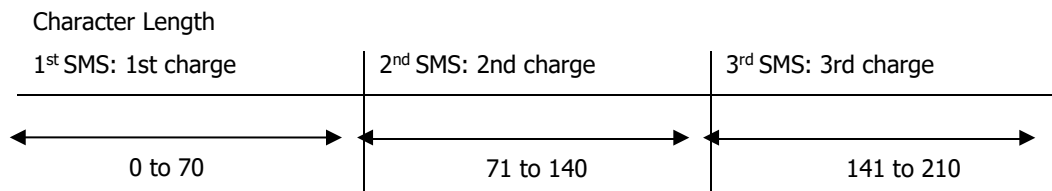
Figure 4.1.2-2: Non-concatenated Unicode Messages

4.2.1 – General SMS (Non-Concatenation – Malaysia)

Roman

Character Length

1st SMS: 1st charge	2nd SMS: 2nd charge	3rd SMS: 3rd charge
0 to 156	157 to 316	317 to 476

0   4

RM0<space>
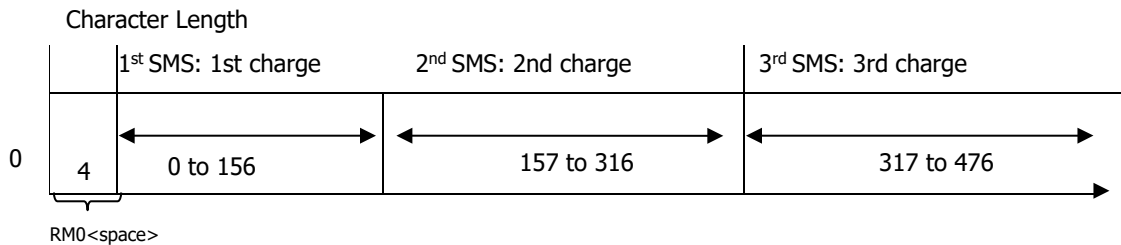
Figure 4.1.2.1-1: Non-concatenated Roman Messages

Unicode

Character Length

1st SMS: 1st charge	2nd SMS: 2nd charge	3rd SMS: 3rd charge
0 to 66	67 to 136	137 to 206

0   4

RM0<space>

Figure 4.1.2.1-2: Non-concatenated Unicode Messages

4.3 – Non-General (Concatenated SMS)

1. Concatenation Messages are connected by a string called User Data Header (UDH).
2. UDH consumes a total of 7 characters for Roman Messages, 3 characters for Unicode Messages.
3. UDH contains information on the concatenated Messages, such as Message type, Message length and so forth.
4. For concatenation in BULK SMS, there is a limitation of up to 1071 characters for Roman and 380 characters for Unicode.
5. Nonetheless, end users will be charged accordingly, based on the number of SMS sent, regardless of API or BULK SMS access. The table below displays the countries that supports Concatenation and those that do not support.

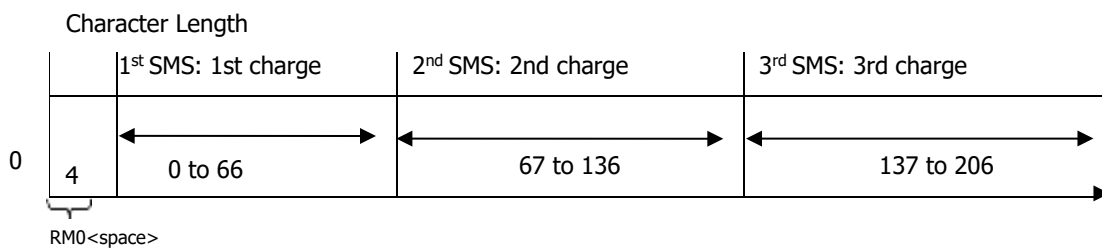| Country	Roman Characters Per SMS	Unicode Characters per SMS	Supports Concatenation	Maximum Characters Allowed for Message Body
Malaysia	160	70	Yes (except DiGi)	**Maxis, Celcom, Tunetalk, XoX, Webe, Yes** Roman: 1067 (7 SMS) Unicode: 331 (5 SMS) **U Mobile** Roman: 476 (3 SMS) Unicode: 276 (4 SMS) ***Note:*** No UDH for U Mobile. Only price indication is supported. For the rest of the Telco, UDH and Price Indication has been factored in.
Indonesia	160	70	Yes	Roman: 1071 (7 SMS)

Philippines	160	70	Yes	All Telcos Roman: 1071 (7 SMS) Unicode NOT supported.
China	70 Note: 6 characters will be reserved for signature.	70 Note: 6 characters will be reserved for signature.	Yes	All Telcos Roman: 448 (7 SMS) Unicode: 448 (7 SMS)
Taiwan	169	69	No	-
Premium class - Vietnam (customer care)	152	66	Yes	All Telcos Roman: 459 (4 SMS) Unicode: 200 (4 SMS) Vietnamobile & Gtel does not support Unicode.

Note: The above is applicable as of 27th Dec 2018.

- Concatenation limit is up to Telco, whether for API or BULK SMS.

- The character limits & features given above are not conclusive and may change according to Telco and handset capabilities.

- Roman Characters above are calculated based on 153 characters (excluding UDH 7 characters) per SMS length.

- Unicode Characters above are calculated based on 67 characters (excluding UDH 3 characters) per SMS length.

- Please note that some Telco may not apply UDH, therefore the number of characters allowed may differ.

- The rule of the thumb for BULK SMS character limitation is 1071 characters for Roman and 380 for Unicode.

4.3.1 – Non-General (Concatenated SMS)

Roman
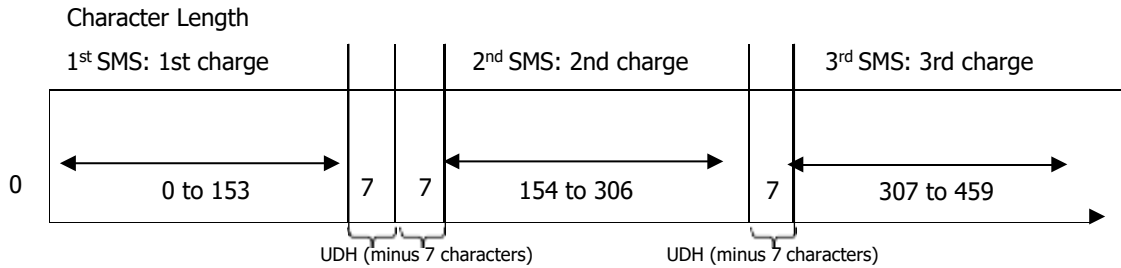
Figure 4.2.1-1: Concatenated Roman Messages
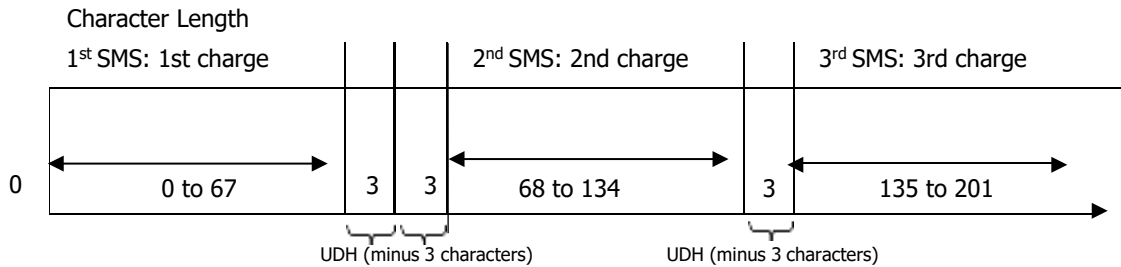
Unicode

Figure 4.2.1-2: Concatenated Unicode Messages

4.3.2 – Non-General (Concatenated SMS – Malaysia)

- Maxis, Celcom, U Mobile, TuneTalk, XOX and YES support concatenation.

- DiGi does not support concatenation. Messages beyond the standard length, are not concatenated, but delivered in separate SMS-es.

- The network operators in Malaysia append a price indication of RM0<space> automatically at the beginning of each message. This price indication is a mandatory requirement and consumes a total of 4 characters from each message sent.

Roman (Concatenation-Malaysia)

Character Length

1st SMS: 1st Charge	2nd SMS: 2nd Charge	3rd SMS: 3rd charge

0 | 4 | 0 to 149 | 7 | 7 | 150 to 302 | 7 | 303 to 455

RM0<space>   UDH (minus 7 characters)   UDH (minus 7 characters)

1 SMS   1 SMS   1 SMS
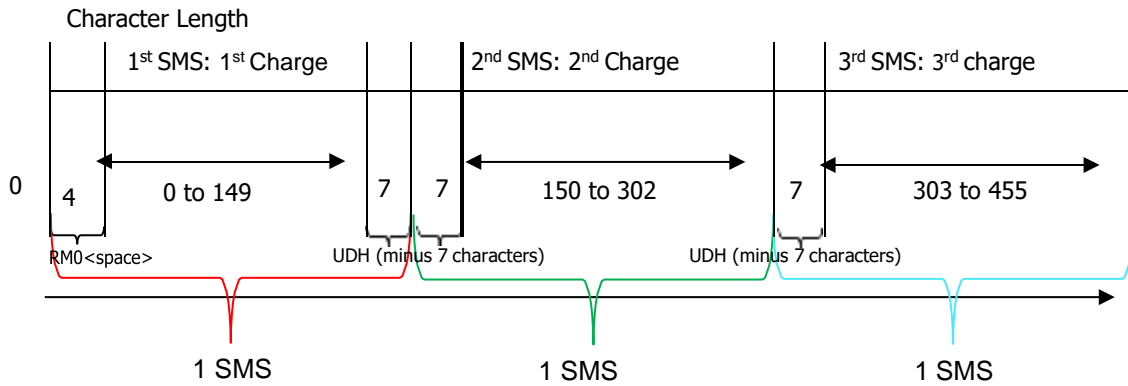
Figure 4.2.1.1-1: Concatenated Roman Messages

Unicode (Concatenation-Malaysia)

Character Length

1st SMS: 1st charge	2nd SMS: 2nd charge	3rd SMS: 3rd charge

0 | 4 | 0 to 63 | 3 | 3 | 64 to 130 | 3 | 131 to 197

RM0<space>   UDH (minus 3 characters)   UDH (minus 3 characters)

1 SMS   1 SMS   1 SMS
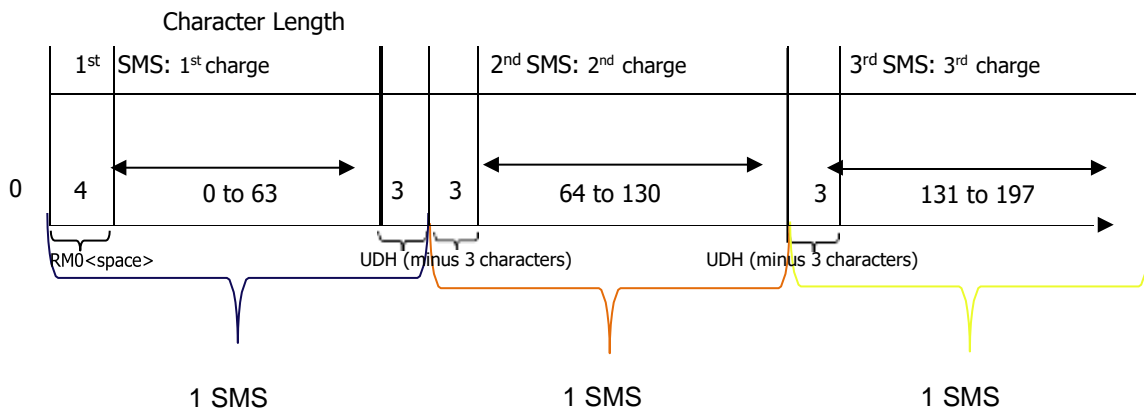
Figure 4.2.1.1-2: Concatenated Unicode Messages

Section 5.0 – Additional Information

5.1 – Throughput Performance
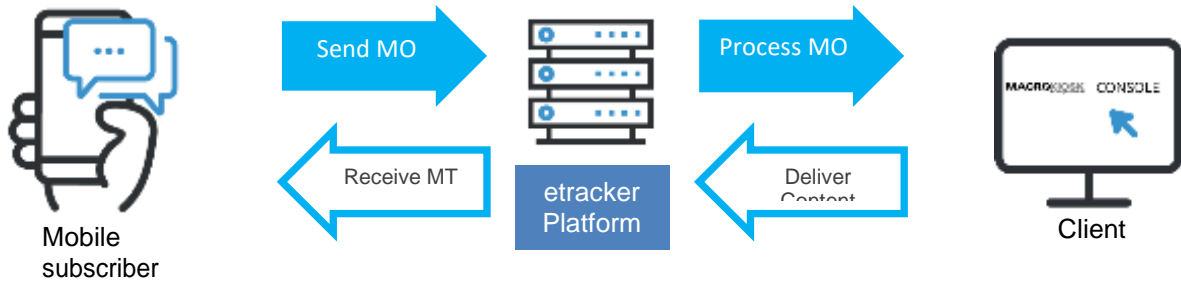
TPS Performance for MT Transactions

Transactions per second (TPS) varies, based on shortcode or longcode transmissions. Please refer to the table below.

Transaction	Description	Average TPS
MT	Shortcode	30/second
MO	Shortcode	5/second
	Longcode	6/minute

Table 5.1-1: MT / MO Transactions per Second / Minute

Note:

- Clients are required to inform MACROKIOSK (7 days) in advance for mass broadcasts of 100,000 SMS and above.

5.2 – MO Shortcode / Longcode (2 way Messaging / Message Box Module)

The table below displays the list of short and long codes as regulated by each country.

Country	Shortcode	International Country Prefix (for Longcode only)	Longcode	
			Local	International
Malaysia	6xxxx	N/A	N/A	N/A
Singapore	7xxxx	N/A	N/A	N/A
Hong Kong	N/A	-	93884308	N/A
Philippines	N/A	63	09175013828	639175013828
Taiwan	N/A	-	0931181946	N/A
Indonesia	N/A	62	81585025473	6281585025473
Vietnam	N/A	84	0911462109	84911462109
Thailand	N/A	66	0613533577	66613533577
China	N/A	86	18319448706	8618319448706

Table 5.2-1: MO Shortcode/Longcode

- The last few digits assigned as xxxxx of the shortcodes shown above are dynamic and assigned by Telcos upon approval.

- Long code refers to the Telco's MSISDN number.

- For local SMS, the country prefix isn't required (only applicable for long code).

- For international SMS, the symbol '+' is not required, however the country prefix is required

5.3 – Sender ID (MT Broadcast)

Sender ID for BULK SMS supports up to 11 alphabets, 11 alphanumerics and 14 numeric characters.

Class	Sender ID	Content Type	Service Type	Remark
Macau				
PREMIUM	Default sender: ETRACKER1 Sender ID: Registration required	*Roman & Unicode*	*Promotional & Transactional*	• Setup fee applies, 7 days registration • Only exact 9 or 11 alpha characters are supported(in capital letter), more/ lesser than that is not allowed
STANDARD	*Dynamic*	*Roman & Unicode*	*Promotional & Transactional*	N/A
ECONOMY	*Dynamic*	*Roman & Unicode*	*Promotional & Transactional*	N/A
CHINA				
PREMIUM	*Random longcode with prefix "106"*	*Roman & Unicode*	*Transactional*	• For non-OTP content, '回复 TD 拒收' needs to be included in the content for user to opt-out. • The same SMS content cannot be sent to the same mobile number more than 5 times in 24 hours. • Content Registration is subject to telco approval. • Mandatory content to be appended in message: - Macrokiosk Signature: *[Chinese Characters]* - Opt out wording: *[Chinese Characters]* - Takes up 12 characters • Only supports transactional content

Class	Sender ID	Content Type	Service Type	Remark
STANDARD	*Random Longcode with prefix "106"*	*Roman & Unicode*	*Promotional & Transactional*	• The same SMS content cannot be sent to the same mobile number more than 5 times in 24 hours. • Content Registration is subject to telco approval. • Mandatory content to be appended in message: *- Macrokiosk Signature: [Chinese Characters]* *- Opt out wording: [Chinese Characters]* *- Takes up 12 characters* • Only supports promotional and transactional content and is subject to Telco approval.
ECONOMY	*Random Longcode*	*Roman & Unicode*	*Promotional & Transactional*	• No content registration is required
SINGAPORE				
PREMIUM	*Default with 7- series shortcode**	*Roman & Unicode*	*Promotional & Transactional*	**Setup & monthly fee applies* *7 days for Sender ID registration*
STANDARD	*Dynamic*	*Roman & Unicode*	*Promotional & Transactional*	N/A
ECONOMY	*Dynamic*	*Roman & Unicode*	*Promotional & Transactional*	N/A
MYANMAR				
PREMIUM	*Sender ID: registration required*	*Roman & Unicode*	*Promotional & Transactional*	**Setup fee applies* *7 days for Sender ID registration* *Domestic traffic only*
STANDARD	*Random sender ID*	*Roman & Unicode*	*Promotional & Transactional*	Domestic and International traffic is supported.
ECONOMY	*Random sender ID*	*Roman & Unicode*	*Promotional & Transactional*	Domestic and International traffic is supported.

Class	Sender ID	Content Type	Service Type	Remark
HONG KONG				
PREMIUM	Default sender: etracker Sender ID: require sender registration	*Roman & Unicode*	*Promotional & Transactional*	7 days registration
STANDARD	*Dynamic*	*Roman & Unicode*	*Promotional & Transactional*	N/A
ECONOMY	*Random Longcode*	*Roman & Unicode*	*Promotional & Transactional*	N/A
THAILAND				
PREMIUM	*Default Sender ID: 021158814* *Sender ID: Registration Required*	*Roman & Thai*	*Promotional & Transactional*	3 days for Sender ID registration
STANDARD	*Dynamic*	*Roman & Thai*	*Promotional & Transactional*	N/A
ECONOMY	*N/A*	*N/A*	*N/A*	N/A
VIETNAM				
PREMIUM	*Sender ID Registration Required*	*Roman Unicode*	*Promotional & Transactional*	<u>Time for sender ID registration</u> • Transactional – 7 days • Promotional – 7 days <u>Transactional content registration</u> • Mobifone & Vinaphone <u>Promotional content registration (all networks)</u> • Specific broadcast time, refer to 7.7
STANDARD	*Combination of random sender ID and long code*	*Roman Unicode*	*Promotional & Transactional*	N/A
ECONOMY	*Random Long code*	*Roman Unicode*	*Promotional & Transactional*	N/A

Class	Sender ID	Content Type	Service Type	Remark
PHILIPPINES				
PREMIUM	*Default Sender ID: etracker* *Sender ID: Registration Required*	*Roman & Unicode*	*Promotional & Transactional*	3 days for Sender ID registration
STANDARD	*Sender ID: Registration Required*	*Roman & Unicode*	*Promotional & Transactional*	3 days for Sender ID registration
ECONOMY	*Random Long code*	*Roman & Unicode*	*Promotional & Transactional*	N/A
TAIWAN				
PREMIUM	*Fixed Sender ID: '931181946'*	*Roman and Unicode*	*Promotional & Transactional*	• The sending of Bulk SMS is allowed from 9am to 12pm and 1.30pm to 4pm, daily. • Any broadcast after 4pm will be scheduled for delivery at 9am the next day. • Does not support concatenation due to Telco limitation. • Does not allow cross promotion of Premium short code in Taiwan's Bulk SMS, Sender ID and Contents.

Class	Sender ID	Content Type	Service Type	Remark
STANDARD	*Random Longcode*	*Roman and Unicode*	*Promotional & Transactional*	N/A
ECONOMY	*Random Longcode*	*Roman and Unicode*	*Promotional & Transactional*	N/A
INDONESIA				
PREMIUM	- All Telco required sender ID registration. - Default sender: etracker (except for Telkomsel) - Telkomsel (with local entity): No default sender ID (must have own sender ID) - Telkomsel (without local entity): Default Sender ID: VGSMS / VFS / PRMTRC	*Only Roman character supported*	*Promotional & Transactional*	Minimal Guarantee applies to: • Smartfren: min purchase of 300 SMS. • Hutchison: 5,000 SMS per month per Sender ID. XL, Hutchison, Indosat & Smartfren regulation: • For domestic traffic, OTP and non-OTP messages need to be segregated in different account. XL & Telkomsel regulation • For international traffic (company without local entity), messages need to be segregated in different account. Kindly contact our sales team for inquiry. Telkomsel regulation: • For domestic traffic, OTP and non-OTP messages need to be segregated in different account. • International traffic is applicable, different account with domestic traffic.
STANDARD	*Pre- registered sender ID*	*Only Roman character supported*	*Promotional & Transactional*	N/A
ECONOMY	*Random Longcode*	*Only Roman character supported*	*Promotional & Transactional*	Message concatenation is NOT supported

Class	Sender ID	Content Type	Service Type	Remark
MALAYSIA				
PREMIUM	*Default 6-series shortcode*	*Roman & Unicode*	*Promotional & Transactional*	*RM0<space> will be auto appended in first SMS. This will consume 4 characters from the total SMS character count.* • *Maxis, Celcom, Digi do not allow international A2P SMS.*
STANDARD	*Random 6-series shortcode / Longcode*	*Roman & Unicode*	*Promotional & Transactional*	*RM0<space> will be auto appended in the first SMS. This will consume 4 characters from total SMS character count.* • *Support Maxis, Celcom, Digi International traffic.*
ECONOMY	*Random 6-series short code / Longcode*	*Roman & Unicode*	*Promotional & Transactional*	*RM0<space> will be auto appended in the first SMS. This will consume 4 characters from the total SMS characters counted.* • *Maxis, Celcom, Digi do not allow international A2P SMS.*
AUSTRALIA				
PREMIUM	N/A	N/A	N/A	N/A
STANDARD	*Dynamic*	*Roman & Unicode*	*Promotional & Transactional*	N/A
ECONOMY	*Random Long Code*	*Roman & Unicode*	*Promotional & Transactional*	N/A
India				
PREMIUM	N/A	N/A	N/A	N/A
STANDARD	*Pre-registered sender & random numeric long code*	*Roman & Unicode*	*Promotional & Transactional*	Transactional content • Exact 6 alpha sender, require registration Promotional content
ECONOMY		*Roman & Unicode*	*Promotional & Transactional*	• Random numeric long code • Have restriction on broadcast time

Table 5.3-1: Sender ID specifications by country

Definitions for Table 5.3-1:

Promotional	**Promotional messages** are messages containing promotional material or advertisement of a product/service via Text SMS or Voice.
Transactional	**Transactional messages** are SMS containing only time sensitive message content.
Fixed Sender ID	A fixed set of characters / alphanumerics provided by the Telco to clients. This Sender ID *is the same* for all messages broadcasted by that Telco for that particular client.
Dynamic Sender ID	This Sender ID is *not the same* for all messages broadcasted by that client. It is a dynamic input which is either a free input inserted by the client ("Free Input") or randomly assigned by the Telco ("Random Sender ID").
Sender ID Registration	Clients are allowed to broadcast messages with *their own branding* by registering the Sender ID of their choice with the Telco. This registered Sender ID will be subject to Telco's approval. If the client does not register for a Sender ID, the Telco may set a Default Sender ID for them or may not allow the delivery.
Private Signature Registration	Clients are allowed to broadcast messages with their own branding by registering a Private Signature of their choice with Macrokiosk. This Private Signature will be subject to Telco's approval. There may be a risk of Private Signature being filtered by Telco. If the client does not register for a Sender ID, the Telco may set a Default Sender ID for them or may not allow the delivery.

5.4 – Delivery Notification (DN) Statuses by MACROKIOSK

Based on the DNs provided by the Telco companies, MACROKIOSK informs clients of the transaction status through online web reports. Please refer to table 5.4-1 for status description. DN is applicable to all countries, whereas handset DNs are subjected to telco availability and changes.

Status	Description
Processing	Message is yet to be delivered to SMSC. Still on queue at MACROKIOSK'S gateway.
Accepted	Message has been delivered to the Telco successfully.
Delivered	Message has been delivered to the mobile subscriber successfully.
Undelivered	Message failed to be delivered to the mobile subscriber.

Table 5.4-1: MACROKIOSK DN

Section 6.0 – System Limitation and Known Issues

6.1 – System Limitation

- '€' symbol will be converted into "E" if it is not supported at telco end.

6.2 – Known Issues

- None

Section 7.0 – Regional Rules and Regulations

There are some regulations to be adhered to for all countries in the regions. The following URL link provides relevant information.

Regulating Body	Country	URL
Malaysian Communication and Multimedia Commission (MCMC)	Malaysia	http://www.skmm.gov.my
Infocomm Development Authority *of Singapore (*IDA)	Singapore	http://www.ida.gov.sg/Policies-and-Regulations/Overview
Badan Regulasi Telekomunikasi Indonesia (BRTI)	Indonesia	http://www.brti.or.id/
Telecommunications Research and Industrial Development Institute (TRIDI)	Thailand	www.tridi.ntc.or.th/
Office of the Telecommunications Authority (OFTA)	Hong Kong	http://tel_archives.ofca.gov.hk/en/aboutOFTA/main.html
Australian Communications and Media Authority (ACMA)	Australia	http://www.acma.gov.au/WEB/HOMEPAGE/PC=HOME
National Telecommunications Commission (NTC)	Philippines	www.ntc.gov.ph
Telecom Regulatory Authority of India (TRAI)	India	http://www.trai.gov.in/http://www.ncClienttrai.gov.in/ncClientregistry/

Table 7.2.1-1

7.1 – Malaysia

- DiGi does not support concatenation.
- DiGi's (available on 66300 and 66688) and Maxis'(all short codes) Handset DN are available at a certain fee, please talk to your account manager to subscribe this feature.
- Delay may happen in the delivery of concatenated SMS to XOX.
- Usage of 6 series shortcode is not allowed for the promotion of 3 series shortcode services.

- For Maxis, when the originating point of the SMS of the brand is from overseas, it will defined as International A2P (International Brands) except for globally registered banks (Local and International) and all international airlines that are registered locally in Malaysia.

- Maxis will only accept international A2P traffic that is delivered through the 4 appointed companies – Infobip, CLX Communication, M800 and TATA Communications. MACROKIOSK will be charged on each violation and our SHORTCODE service will be suspended immediately if it is violated for the 4th times.

- Celcom will only accept international A2P traffic that is delivered through TATA Communications and Axiata MIFE. Clients who violate this regulation will be charged USD 0.05 (RM 0.25) per SMS or risk service suspension.

- MACROKIOSK have dedicated short code for Digi International traffic, as advised by Digi. User will be received in 66833.

- Clients that wish to send International brands A2P traffics to Celcom, Maxis, and Digi MUST opt for the Malaysia Standard class instead.

- Please refer to the International A2P Blocking List (Maxis, Celcom, and Digi) document for the full list of international brands blocking details.

- Extended characters (¡ ¤ Ä Ö Ñ Ü ä ö ñ ü § l) are not supported on Umobile. "¡" will be converted to "!" and "¤" converted to "o" to resolve the delivery issue towards Umobile. The rest of the characters will follow the conversion at Umobile's end.

- All the messages must include their company brand name in the content. Failing which penalty might be imposed.

7.2 – Indonesia

- The only allowed broadcast times are from 8am to 11am, and 2pm to 4pm, daily, GMT +7.

- Any other broadcast that's not within the above mentioned provisioned time will be barred unless prior Telco approval is obtained.

- In premium class, all Indonesia telco are very strict in filtering local and international traffic. For local traffic, non-OTP and OTP messages are also need to be segregated. Do inform our sales team in the foremost position on which type of traffic will be broadcasting.

- Telco Smartfren supports only the following special characters, @ ' < > ! # % * ( ) - = + : ; / ? Sending unsupported special characters as listed below will have a risk of undelivered message or message contents replaced with other characters. Below are some of the end-results on sending unsupported special characters:-

Unsupported Special Characters	Results
\	Character will be removed in message content.
$	Character will be replaced with space in message content.
^	Character will be replaced with space in message content.
_	Character will be replaced with space in message content.
[	Character will be replaced with < in message content.

]	Character will be replaced with > in message content.
|	Character will be replaced with @ in message content.
"	Message will not be sent.
&	Message will not be sent.

7.3 – Thailand

- The display of SI Link in the Messages is not supported.

7.4 – China

- All SMS messages must be pre-registered and review by the Telco. Only the approved content can be broadcast.

- A mandatory message signature "【美科鸿霆】" is auto to be appended to Bulk SMS with 6 character counts at the SMS as a header. Some telco will append at the start of the SMS, some telco will append at the end of the SMS.

- A message footer such as "回复 TD 拒收/退订" or "退订回 T" might be appended at the end of the SMS for non-authentication/non-OTP content subject to telco review. It is an opt-out option for the subscriber. If the subscriber replies "TD" or "T", then the mobile number will not be able to receive any messages from MACROKIOSK anymore.

- China Telco filters and rejects MT contents with the following characters:

Telco	Prohibited words
China Telecom	'联通'or '移動'
China Unicom	'电信' or '移動'
China Mobile	'电信' or '联通'

- The China connectivity is strictly meant for transactional message broadcast. Any promotional message broadcast with rude, violent, sexual, political, governmental related wordings are prohibited and will be filtered by Telco.

- In special cases when promotional message is allowed, Promotional message without any prohibited content required pre-registered and subject to approval.

- There are few characters not supported in the BULK SMS: \ and ' . China telco does not support Thai characters.

7.5 – Hong Kong

- SI Link is not supported when roaming.

7.6 – Taiwan

- The sending of bulk SMS is allowed from 9am to 12pm and 1.30pm to 4pm, daily.
- Any broadcast after 4pm will be scheduled for delivery at 9am the next day.
- Does not support concatenation due to Telco limitation.
- Does not allow cross promotion of Premium Shortcode in Taiwan's Bulk SMS, Sender ID and Contents.

7.7 - Vietnam

- The following are Vietnam Telco's requirements:

Vietnam's Promotional Contents	Vietnam's Transactional Contents
Before broadcast, promotional Contents MUST be checked again. *Checking takes approximately 2 days*	No restriction on broadcast time
Allowed broadcast times are from 8am to 11am and 1pm to 6pm (GMT +7)	

- Content registration is required for Mobifone and Vinaphone via premium class.

7.8 – Turkey

- Any messages sent to Turkish subscribers must contain the operator code (B-code) of the sending operator at the end of the SMS body.
- By default, an operator code (Bxxx) will be appended at the end of each message content. This means that the total supported length of the SMS, excluding the operator code, will be 156 characters.

7.9 – India

Promotional Contents	Transactional Contents
Allowed broadcast times are from 9am to 9pm (GMT+5:30)	No restriction on broadcast time

Section 8.0 – Frequently Asked Questions

1.) What are the protocol that can be used to send messages?

The protocol can be either HTTP, HTTPS or SMPP.

2.) What types of Web service protocols that can be used to send and receive MO & MT messages?

REST or SOAP.

3.) If mobile subscriber sends in a MO, is it compulsory to send out a MT?

A reply (MT) Message is recommended to have, because mobile users would require acknowledgement on your service.

4.) Do we automatically get delivery reports or do we have to request them and all networks offer them?

You may call our DN (Delivery Notification) via DN API. Real Time API is also available, however you have to apply for it as it is not provided by default in your package. For bulk messages, you may log into MACROKIOSK's BULK SMS application to view DNs in real time.

5.) What is the maximum character per SMS Message?

The maximum character per SMS is 160. Some Telco allows concatenation whereby Messages more than 160 characters are allowed to be sent in many SMS, however not all Telco allows that. Please refer to Table 4.2-1 for concatenation information. Note that end users will be charged for every SMS sent out.

6.) Do we have any restrictions on the Bulk SMS messages can be sent?

Please refer to *Known Issues* to determine restriction of Bulk SMS if any. Alternatively you may also refer to *Rules and Regulations* to determine each country's regulations.

7.) What are the benefits of SOAP and REST respectively?

	SOAP	**REST**
Easy to be used in old/new systems.	SOAP is the legacy web service interfaces that has been around for a long time. It supports most legacy systems and can be interfaced with web services easily.	REST was written to overcome the issues that arose from SOAP. REST mainly supports newer versions of systems and doesn't support older versions.
Transport protocols	SOAP can use almost **any transport protocol** such as HTTP / HTTPS / SMTP / JMS etc.	REST **can only use HTTP/HTTPS**. It uses the standard *GET*, *PUT*, *POST*, and D*ELETE* verbs. Therefore it supports easy development and existing use of web infrastructure.

Message Formats	SOAP uses XML as its message format.	REST uses **URL to send requests and receive replies.** Every single request from client to the server is treated as a new request and must contain all parameters needed to establish communication.
Resource Usage	SOAP is considered a 'heavyweight' because it has XML like structure which requires starting 'tags' as well as ending 'tags', thus increasing the network load as they have to travel over the network, which is not the case with REST.	REST is considered 'lightweight' because it doesn't carry a baggage of your past requests. Each request is *new* and once the system has responded to you, either by returning an error code or a successful content via HTTP, your session will be closed.
Bandwidth Usage	Following through from 'Resource Usage'; since the start and end tags have to be included, the bandwidth usage also increases since more bytes are taken up.	Following through from 'Resource Usage'; since REST is lightweight, lesser bandwidth is required.
Security	There is authentication and authorization in the application layer for SOAP.	Secure data should never be sent as parameters in the URL.
Mobile app integration	Since SOAP has more headers and tags to be included, it is not advisable to be used for this purpose.	REST is particularly useful for mobile devices such as phones and PDAs since additional parameters like headers/tags and other SOAP elements are lesser.
Caching	The goal of caching is never having to generate the same response twice. The benefit of doing this is that we gain speed and reduce server load. SOAP, when using HTTP as the transfer mechanism, is sent via HTTP POST requests. Therefore, the response is not cached.	Restful services provide a good caching infrastructure over HTTP GET method (for most servers). This can improve the performance of the server.

8. Is Spotter available for both Prepaid and Postpaid subscribers?

Yes, it is. Please ensure you have subscribed for this feature before use, as it is an add-on subscription.

Glossary

Terms	Definition
API	Application Programming Interface The interface that a computer system, library or application provides in order to allow requests for services to be made out of it by other computer programs, and/or to allow data to be exchanged between them.
Client	Content Provider A person or company that supplies content.
DN	Delivery Notification A status returned to the sender to indicate the delivery status of each Message transaction.
HTTP	Hypertext Transfer Protocol Http is the set of rules for transferring files (text, graphic images, sound, video, and other multimedia files) over the internet.
HTTPS	Hypertext Transfer Protocol Secure A secure protocol is used to request and transmit files, especially webpages and webpage components, over the Internet.
MNP	Mobile Number Portability Enables mobile users to retain their mobile telephone numbers when changing from one Telco to another.
MO	Mobile Originator A response / request Message sent from mobile phones.
Sender ID	This is the identification that appears at the end of the message to inform the mobile users, who the message is from.
MSISDN	Mobile Subscriber Integrated Services Directory Number A number uniquely identifying a subscription in a GSM (Global System for Mobile Communications) mobile network. Simply put, it is the telephone number of the SIM card in a mobile phone.
Telco	Refers to the Network Operator which provides telecommunications services such as telephony andata communications.
MT	Mobile Terminator A message received on mobile phones. These Messages are typically viewed by the recipient in their text Message 'Inbox'.

Terms	Definition
SMS	<u>Short Messaging Service</u> SMS is a communication service component that allows for short text messages to be sent from one mobile phone to another.
TPS	<u>Transactions Per Second</u> The number of transactions performed within a second.
UDH	<u>User Data Header</u> UDH's function is to join messages more than 160 characters long. User Data Header contains information on the Message type, the length of a message, concatenation and more.
System Limitation	Refers to MACROKIOSK's system limitation which may be further enhanced in the future depending on client's requirement.
Known Issues	Issues that are beyond MACROKIOSKs control but highlighted to clients for their knowledge.

About MACROKIOSK

Founded in the year 2000, MACROKIOSK prides itself as Asia's leading mobile technology enabler – pushing the boundaries in Enterprise Mobility Solutions and Mobile Payment Services.

Humbly founded in Malaysia by three brothers, Kenny Goh, Henry Goh and CS Goh, MACROKIOSK has expanded its wings across 12 countries across Asia and beyond, with over 2000 clients from 37 different countries worldwide with Kuala Lumpur operating as its main headquarters. MACROKIOSK is deeply rooted in 18 different industries and counting.

Even as MACROKIOSK continues to expand and improve upon their wide range of enterprise and mobile payment solutions, their goal remains the same, which is to bring out the best of what their clients could offer with the use of ever evolving mobile technology.

Through over a decade's worth of contribution to the mobile solutions industry, MACROKIOSK has earned a plethora of accolades such as the Tenaga Nasional Berhad (TNB) Vendor's Choice Award (2014), the Red Herring Top 100 Global Award (2012), the Asia Pacific Entrepreneurship Award (2011), and the BrandLaureate Award (2011) to name a recent few.

As a company that deals heavily with telecommunication and often highly confidential material, MACROKIOSK upholds itself to deeply rooted principles of security, confidentiality and reliability. As such, MACROKIOSK has been awarded with a ISO27001:2005 ISMS Certification by TUV Rheinland, recognised as a Licensed Service Based Operator (SBO) by iDA Singapore, Licensed Nationwide ICP by MII China, and granted a Licensed ASP Messaging Class by MCMC Malaysia as well as being recognised as an MSC Pioneer Status company by MDEC Malaysia.

Notes