

Interface Specification

FBS-14789

Cicero SMS Gateway specification

Interface Specification

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1 Introduction

This document describes how Cicero LMS interacts with services for sending text messages (SMS) to patrons, also known as 'SMS Gateways'. It is based on specifications from Computopic and LinkMobility.

The target group for this document is suppliers of SMS gateways or employees at the library that would like to understand the technical details of how Cicero LMS interacts with the services for sending SMS.

Which supplier of a SMS gateway to use or whether to send SMS to patrons can be configured in Cicero LMS.

1.1 References

Reference	Titel	Link
[SDD0003]	Cicero LMS - Solution Architecture	Contact Systematic for the document.
[LinkMobility official documentation]	LINK Mobility SMS REST API	https://linkmobility.no/wp-content/uploads/sites/3/2019/06/SMS_REST_API_MT_DLR-1.24.pdf

2 Outgoing SMS messages

Cicero LMS supports different types of SMS Gateways:

- XML based SMS Gateways which receives data as form parameters and responds with XML data
- JSON based SMS Gateways which receives JSON data and responds with JSON data

2.1 XML based SMS Gateways

This SMS Gateways integration support providers like: Computopic, SureSMS, GatewayAPI.

When Cicero LMS sends messages to patrons via the XML based SMS Gateways, a URL is invoked at the SMS Gateway with parameters about where and how to send the SMS.

URL example: <https://smssys.dk/>

Form Parameter	Description	Example
user	Username	user1
pass	Password	password123
number	Phone number to send to	12345678
message	SMS body	Hej
charset	Charset to use	UTF-8
Sendtiming	At what time to send the SMS	201611290800

The URL is invoked using the HTTP operation 'POST' and the parameters are inside the message body encoded as form parameters

The URL to the SMS gateway is configurable individually per agency (library) in Cicero LMS. Handling messages to numbers from other countries than Denmark is the responsibility of the SMS service provider.

2.1.1 Parameters

The different parameters in the URL is described in this section.

2.1.2 User

The username to login to the SMS Gateway.

The value can be configured individually per agency in Cicero LMS.

The parameter is *mandatory*.

2.1.3 Pass

The password for the user to login to the SMS Gateway.

The value can be configured individually per agency in Cicero LMS.

The parameter is *mandatory*.

2.1.4 Number

The telephone number the SMS is addressed to.

The parameter is *mandatory*.

2.1.5 Message

The message to be sent to the receiver of the SMS.

The parameter is *mandatory*.

2.1.6 Charset

The encoding of the message sent.

The parameter is *mandatory* and is always set to 'UTF-8'.

2.1.7 Sendtiming

In case the SMS should not be sent immediately, this parameter specifies when the message should be sent.

The parameter is *optional* and is only included in case the message should not be sent immediately.

Format: yyyyMMddHHmm

Example sendtiming=201611290800 specifies that the message should be sent at 8:00 the 29th of November 2016.

2.1.8 Response

The following XML structure is expected as response when the SMS Gateway is invoked by Cicero LMS.

```
<?xml version="1.0" encoding="iso-8859-1"?>
<root>
  <msg_id></msg_id>
  <status>
    <statusline>
      <code>[return code]</code>
      <description>[Description of returncode]</description>
    </statusline>
  </status>
</root>
```

All other codes than 0 is interpreted as an error and Cicero LMS will not consider the message to have been sent.

Example of successful response from the SMS Gateway:

```
<?xml version="1.0" encoding="iso-8859-1"?>
<root>
```

```
<msg_id></msg_id>
<status>
  <statusline>
    <code>0</code>
    <description>SMS afsendt.</description>
  </statusline>
</status>
</root>
```

2.1.9 Error codes

Cicero LMS interprets the error codes returned as follows:

- 1001 – Invalid username and/or password.
- 1002 – Invalid phone number specified.
- 1003 – A sender alias is not allowed along with a price.
- 1004 – Message is too long.
- 1005 – Unable to process message.
- 1006 – Invalid country code specified.
- 1007 – No gate specified.
- 1008 – Sender alias is too long.
- 1009 – Specified sender alias not allowed.
- 1010 – No sender alias is allowed for user.
- 1011 – No price is allowed for user.
- 1012 – Invalid price specified.
- 1013 – Invalid timing timestamp.
- 1014 – Timing timestamp already expired.
- 1015 – Timing timestamp not allowed along with by-pass queue.
- 1016 – By-pass queue not allowed for user.
- 1017 – Provider(s) not responding.
- 1018 – Unspecified error.
- 1019 – Invalid short code.
- 1020 – Price specified without shortcode.
- 1021 – Not all mandatory variables set.
- 1022 – Unsupported variables attempted set.
- 1023 – Invalid callbackurl.

- 1024 – Gate not found.
- 1025 – Price/donation not allowed on short code.
- 1026 – Bulk messaging not allowed for country.
- 1027 – Message could not be delivered.
- 1028 – Rejected by provider.
- 1029 – Provider temporarily unavailable.
- 1030 – Unknown subscriber.
- 1031 – Invalid message ID.
- 1032 – Callbackurl set without message ID.
- 1033 – Invalid WAP URL.
- 1034 – Donation not allowed.
- 1035 – Donation specified without price.
- 1036 – WAP message too long. 220 characters maximum.
- 1037 – SMS price not established.
- 1038 – Call from non-approved server.
- 1039 – WAP URL not allowed with binary data.
- 1040 – Invalid port.
- 1041 – Message must be hex values when port is set.
- 1042 – Buffered, e.g. because phone is off.
- 1043 – Invalid port.
- 1044 – Message must be binary.
- 1045 – Binary messages not available.
- 1046 – Gateway temporarily unavailable.
- 1047 – Invalid message category.
- 1048 – Invalid charset

2.1.10 Error scenarios

If the service is not available, then the error handling strategy "Asynchronous notification / update to external system" described in [SDD0003] applies.

2.2 JSON based SMS Gateways

This JSON based Gateways integration support providers like: LinkMobility.

When Cicero LMS sends messages to patrons via the JSON based SMS Gateways, a URL is invoked at the SMS Gateway with JSON data specifying to who and how to send the SMS. Basic Authentication with username and password is included in the http header.

2.2.1 Configuration

LMS uses the following configurations to configure the integration:

Configuration name	Description	Value
SMS service URL	Url to the LinkMobility SMS Gateway	https://n-eu.linkmobility.io/sms/send (example)
SMS service LinkMobility PlatformId	PlatformId used for configuration of LinkMobility SMS service.	SMS/COMMON_API
SMS service LinkMobility PlatformPartnerId	PlatformPartnerId used for configuration of LinkMobility SMS service.	
SMS service LinkMobility Source number	Source number used as sender of SMS messages through LinkMobility.	
SMS service username	Username used for authentication against LinkMobility	
SMS service password	Password used for authentication against LinkMobility	

2.2.2 Sending a message

The following shows the values used by Cicero when communicating with LinkMobility and also gives an example of the actual JSON being send:

Parameter	Datatype	Description
Source	String	Required. This is the source number from where the message should be sent.
destination	String	Required. This is the destination number.
userData	String	This is the message content itself. The DCS specifies the format (encoding) on this value. Note that messages that messages of more than 140 bytes must be split into multiple messages. Common will do that automatically by default.

platformId	String	Your platformId – either SMS or COMMON_API Provided to you by Support.
platformPartnerId	String	Your platformPartnerId. Provided to you by Support
customParameters	KeyValue	<p>Messages may be scheduled for a later delivery but at most 3 months in the future.</p> <p>Add the custom parameter “scheduledTime” with the value as the date that the message should be sent. The date should be formatted according to RFC3339.</p>

```
{
  "source": "Cicero",
  "destination": "xxxxxx",
  "userData": "Hi xxx, Please note that yyy zzz",
  "platformId": "COMMON_API",
  "platformPartnerId": "22928",
  "customParameters": {
    "scheduledTime": "2017-06-07T15:30:00Z"
  }
}
```

2.2.3 Response message

If a message is successfully received and processed, a 200 OK Http response status code will be returned. If other response codes are received, Cicero will handle the response depending on the code returned:

- If the response indicates a temporary error in sending, Cicero LMS will retry sending several times until it gives up and places the message on an error queue for manual handling by the library employees.
- If the response indicates an error that is not temporary, e.g., an error in the request data, Cicero LMS will place the error directly on the error queue.

The following shows an example of a successful response from LinkMobility and an example of an error response from LinkMobility:

Response on success	<pre>{ "messageId": "3XSdZm3c23ZjLv4T5e3NiR", "resultCode": 1005, "description": "Queued" }</pre>
Response on error	<pre>{ "status": 101101, "description": "Access denied", "translatedDescription": "Access denied" }</pre>

2.2.3.1 Possible ErrorResponse Codes

101100	Invalid authentication. Please check your username and password.
101101	Access denied. Please check your username and password.
106000	Unknown Error. Please contact Support and include your whole transaction.
106001	Parse Error. The object to send in the request is badly formatted.
106102	Unable to access SMSC credentials
106200	Invalid or missing platformId. Please check your platformId.
106201	Invalid or missing platformPartnerId. Please check your platformPartnerId.
106202	Invalid or missing currency for premium message. Please check your price and currency
106300	No gates available. Please contact Support and include your whole transaction.
106301	Specified gate unavailable. Please check your gateId.

3 Interactive SMS messages

Currently Cicero LMS supports renewal of loans via SMS. A loaner can choose to renew one or all the loans on accounts associated with their phone number.

To enable this functionality, a Cicero LMS system administrator needs to enable the "Renew via SMS" integration in F7. A user account for the SMS resource also needs to be created under external/other integration users.

The SMS service provider needs to be configured to call a specific rest interface on the Cicero side.

The url looks like this:

```
[CiceroURL]/rest/[agencyId]/msggateway?user=[username]&password=[password]&shortcode=[shortcode]&countrycode=[countryCode]&number=[senderNumber]&text=[messageText]
```

Example:

```
[CiceroURL]/rest/[agencyId]/msggateway?user=sms&password=MyPassword&shortcode=1910&countrycode=45&number=52903991&text=asd forny alle
```

3.1 Parameters

3.1.1 CiceroURL

The url to the Cicero LMS server

3.1.2 AgencyId

The ISIL number of the agency (library). Each agency has to set their own configuration and decide if they want to enable renew via sms at all, mandatory.

3.1.3 Username

The username for the SMS gateway account, mandatory.

3.1.4 Password

The password for the SMS gateway account, mandatory.

3.1.5 Shortcode

The number that the user sent the text message to. It varies from provider to provider and is not used by Cicero but it is mandatory.

3.1.6 CountryCode

The two digit country code of the number that contacted the gateway, mandatory.

3.1.7 SenderNumber

The phone number of the person requesting the renewal, mandatory.

3.1.8 MessageText

The actual text in the SMS, mandatory.

3.2 Sender number and country code

Cicero uses the sender number to try to identify the loaner. If no loaners are identified then no response will be given. Note that multiple loaners can share a phone number (parent and child etc). The renew command will take all the matched loaners into account.

3.3 Message text

The message text must contain exactly 3 words.

Most sms providers require a prefix word to be present in the message to match it with the correct endpoint so Cicero will ignore the first word.

The second word needs to be "forny"

The third word needs to be either "alle" or the item number of the material to be renewed.

Examples:

"Horsens forny alle"

"aah forny 12345678"

In the case of "forny alle", all the loans on all the loners that share that phone number will be renewed.

3.4 Renew responses

The renew operation will generate one or more responses if the phone number is recognized. The response(s) will be sent to the number that requested the renewal and will be send as a regular outgoing sms message as described in this document. Note that depending on the SMS provider, the responses might come back from a different phone number than the one the renewal was sent to.

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