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Last Invention® USSD Application Development Platform (Gateway 2) API **User Manual**

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1. Version Control

Revision Number	Revision Date	Author	Changes
0.1	15 Apr 2016	Thato Dipudi	Initial Document Release
0.2	22 Nov 2016	Thato Dipudi	Updated filename
0.3	04 May 2017	Thato Dipudi	Updated document name and trademark information
0.4	22 Apr 2018	Thato Dipudi	Added section: Retrieval of your project's Last Invention platform information



2. Provisioning

All services must first be provisioned by The Last Invention.

The client must supply The Last Invention with the following site specific information:

- Endpoint URL, including port, at which your application listens for incoming USSD requests.
- The mechanism required for connectivity, i.e. POST, GET or XML POST.

Communication overview.

Communication between Last Invention® USSD Platform and client applications is done using the HTTP 1.1 protocol, parameters are passed in an XML payload or using parameters depending how the service is defined on the The Last Invention's gateways.

When the gateway performs a HTTP communication to the client application, the client application has 5 second to respond or the communication is terminated.



3. Gateway Request Parameters

The following defines the parameters used to communicate between the USSD gateway and the client application. Optional parameters are marked as such and can be left out.

USSD Platform to Client URL.

Format:

`http://Developer_Application_URL/?msisdn=132123123&sessionid=16473528&network=1&request=5&type=1
&menu=default&option=*&dialstring=*120*1514*13%23&mccmnc=65501&mno=vodacom`

Element	Type
<i>msisdn</i>	string
<i>sessionid</i>	integer
<i>network</i>	string
<i>request</i>	string
<i>menu</i> (optional)	string
<i>option</i> (optional)	string
<i>dialstring</i>	string
<i>mno</i>	string

The USSD Service will always add the following parameters to the query string of any URLs to call. Developers may use these parameters in any way that they deem fit.

msisdn = mobile number of the user in international format (e.g. 27820000000).

sessionid = indicates the USSD session ID. This is a random number assigned by the mobile network. The identifier for the current USSD session. Session identifiers may be reused by future USSD sessions. The session starts with a type 1 request and ends with type 3 or 4 or by the client application. Example: 16473528.

network

Network Identifier. The following identifiers are currently defined:

- 1 Vodacom SA (65501)
- 2 MTN SA (65510)
- 3 Cell C / Virgin Mobile (65507)
- 6 Telkom Mobile (65502)

Example: 1

**request**

The input that the user submitted from their device. This is used for Free Text answers.

The initial request will always be the full USSD string that was dialled by the subscriber. Subsequent to that the request field will contain the subscriber input.

When using the GET or POST parameters interface this will be url encoded. This is decoded transparently by most web servers.

Example: *123*12345# or url encoded %2A120%2A12345%23

type

Attribute	Description
<i>type</i>	1. Initial Request
	2. Response
	3. Session ended by subscriber
	4. Session has timed out

menu (optional)

Internal / Unused

option (optional)

Internal / Unused

dialstring (only available on http (form) parameter GET and POST)

This contains the code that the subscriber dialled to initiate the USSD session

Example: *123*12345# or url encoded %2A120%2A12345%23

mno (only available on http (form) parameter GET and POST)

The mno field contains the **name** of the mobile network operator (MNO) that the USSD session originates from. At the moment it could contain one of the following values:

vodacom, or

mtn, or

cellc, or

telkom, or

virgin

This list will expand when more MNO's come into the market.



4. Client Response Parameters

Description

Element	Type
<i>text</i>	string
<i>session</i>	integer
<i>cost</i>	integer
<i>ref</i>	integer

text

The response text to be displayed on the GSM subscriber's handset.

Example: **Hello World!**

session

Specifies the state of the current session after the response text has been delivered to the GSM subscriber. Possible values are:

Value	Description
0	Terminate the USSD session
1	Keep session active, allowing the GSM subscriber to send a response.

cost (optional)

The cost rating for the current Session this is mandatory for premium rated numbers. Most USSD codes are bearer rated so you can leave it out if you haven't explicitly requested a premium code. Where necessary, the required value will be provided by The Last Invention.

Remember that this is optional, so you can leave it out.

Example: 300

ref (optional)

The reference number to accompany the cost element. This is mandatory for premium rated numbers. Most USSD codes are bearer rated so you can leave it out if you haven't explicitly requested a premium code. Where necessary, the required value will be provided by The Last Invention.

Remember that this is optional, so you can leave it out.

Example: 123



A note about premium rated USSD.

Telkom only bills after the first request. The first request will get to your gateway before any billing takes place. **Do not dispatch content on the first screen.**

Virgin traffic is **not** billed at the moment. The MNO field should be used to filter this traffic out of premium USSD apps. Virgin users get free USSD.

MTN requests the users consent before forwarding the billing to our gateway. Vodacom and CellC bill as expected.

Examples:

A. Sample HTTP POST request and response

Request

```
POST /ussd/ HTTP/1.1
Host: www.Developer_Application_URL_domain.com
Content-type: application/x-www-form-urlencoded
msisdn=27831231234&sessionid=12345&network=1&request=
%2A120%2A1234%23&type=1&mno=mtn
```

Response

```
HTTP/1.1 200 OK
Content-Length: 27
Content-Type: application/x-www-form-urlencoded
text=Hello+world!&session=1
```

Sample HTTP GET request and response

Request

```
GET /ussd/msisdn=27831231234&sessionid=12345&network=1&request=
%2A120%2A1234%23&type=1&mno=mtn HTTP/1.1
Host: www.Developer_Application_URL_domain.com
```

Response

```
HTTP/1.1 200 OK
Content-Length: 27
Content-Type: application/x-www-form-urlencoded
text=Hello+world!&session=1
```




B. Sample XML HTTP request and response

Request

```
POST /ussd/ HTTP/1.1
Host: www.clientdomain.com
Content-type: text/xml
<ussd>
  <msisdn>+2782000001</msisdn>
  <sessionid>104</sessionid>
  <network>1</network>
  <request type="1">*120*12345#</request>
</ussd>
```

Response

```
HTTP/1.1 200 OK
Content-Length: 97
Content-Type: text/xml
<ussd>
  <text>Hello world!</text>
  <session>0</session>
</ussd>
```



5. Retrieval of your project's Last Invention platform information

You can retrieve your project's Last Invention platform account information via the following API.

Retrievable information:

- a. Your company name (as stored on the platform) => entity_company_name.
- b. Your unique project identifier => entity_project_id.
- c. The package of the service your project is using => entity_package.
- d. The number of USSD application menus => ussd_no_of_menus. Note that for Developer Program services, this tag will have a value of 0.
- e. The cell phone number of the project administrator => admin_number.
- f. The email address of the project administrator => admin_email_address.
- g. The project status (ACTIVE / INACTIVE) => account_status.
- h. The number of SMS credits in the account => sms_credits_balance. For the developer program, we keep it at 5 because we may have system generated SMS alerts that the account admin needs to receive (example is when the account reaches their low-threshold of 100 session credits).
- i. The number of USSD session credits in the account => ussd_sessions_credits_balance.
- j. The date and time that the project was created on the Last Invention platform => date_created.

A. You need to call the URL ...

http://ussd.lastinvention.co.za/ussd/clientaccount/?ussd_code=xxx&proj_id=yyy
Where...

xxx = URL encoded USSD code, and

yyy = your project Id

You need to request your project Id from the support department. Please keep the project Id secure.

B. The response from our server will be ...

```
<?xml version="1.0" encoding="utf-8" ?>
<ussd_acc_info>
  <entity_company_name>Your company name on our system</entity_company_name>
  <entity_project_id>Your project id</entity_project_id>
  <entity_package>MyOwn_SME_USSD</entity_package>
  <ussd_no_of_menus>8</USSD_no_of_menus>
  <admin_number>27824638004</admin_number>
  <admin_email_address>name@domain.co.za</admin_email_address>
  <account_status>ACTIVE</account_status>
  <sms_credits_balance>1000.0</sms_credits_balance>
  <ussd_sessions_credits_balance>572.0</ussd_sessions_credits_balance>
  <date_created>2019-08-16 14:02:01.786330</date_created>
</ussd_acc_info>
```



If there is no account for the enquiry, the response will be ...

```
<?xml version="1.0" encoding="utf-8" ?>
<ussd_acc_info>
  <entity_company_name></entity_company_name>
  <entity_project_id></entity_project_id>
  <entity_package></entity_package>
  <ussd_no_of_menus></USSD_no_of_menus>
  <admin_number></admin_number>
  <admin_email_address></admin_email_address>
  <account_status>Account does not exist</account_status>
  <sms_credits_balance></sms_credits_balance>
  <ussd_sessions_credits_balance></ussd_sessions_credits_balance>
  <date_created></date_created>
</ussd_acc_info>
```

NB:

The xml structure may be amended later. Check the latest API document for any changes.



6. Support

We've tried to put all the information we could in this Guide, but we are sure you'll have some questions.

If you would like to chat to us, please contact on any of the following channels:

- Phone: +27 (0) 82 463 8004
- WhatsApp: +27 (0) 82 463 8004
- Fax: +27 (0) 86 547 5309
- USSD Client Platform (South Africa only): Dial *120*5533#
- Skype name: lastinvention

Email:

- Sales: sales@lastinvention.co.za
- Support: support@lastinvention.co.za
- General Info: info@lastinvention.co.za

Business Hours:

- Time Zone: GMT + 2 (Pretoria, South Africa)
- Monday - Friday: 09H00 to 17H00
- Saturday: 09H00 to 12H00
- Closed on Sunday and Public holidays ([Holiday Schedule](#))

Please also visit our website and submit a support ticket at:

Secure Client Portal: <https://my.lastinvention.co.za/>

Main website: <https://lastinvention.co.za/>



7. Trademark notice

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