



Quick Start Guide
DOI OBS Billing using Short Code

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Version History

Version	Author	Contact	Date	Notes
1.0	Martin de Jager	martin@intarget.mobi	23/10/2015	Initial draft version for internal review
1.1	Martin de Jager	martin@intarget.mobi	26/10/2015	Final release version

1. Introduction

The purpose to this quick start is to provide a high level overview of the DOI process of subscribing a new user via Short Codes. This guide uses the standard XML over HTTP Higate API.

This guide should be used in conjunction with the main API documentation as this guide does not cover the configuration elements, but only the main process that must occur between Subscriber, Telco, Higate and the client application/server.

Additional resources are available from the Intarget Support Page at:

<http://integrat.freshdesk.com/solution/categories/4000003081>

Alternatively, our support desk is available for assistance by logging a ticket with:

ticketman@intarget.mobi

Please include as much information including your account name, logins and description of the problem that is been faced and our Service Delivery team will assist you further.

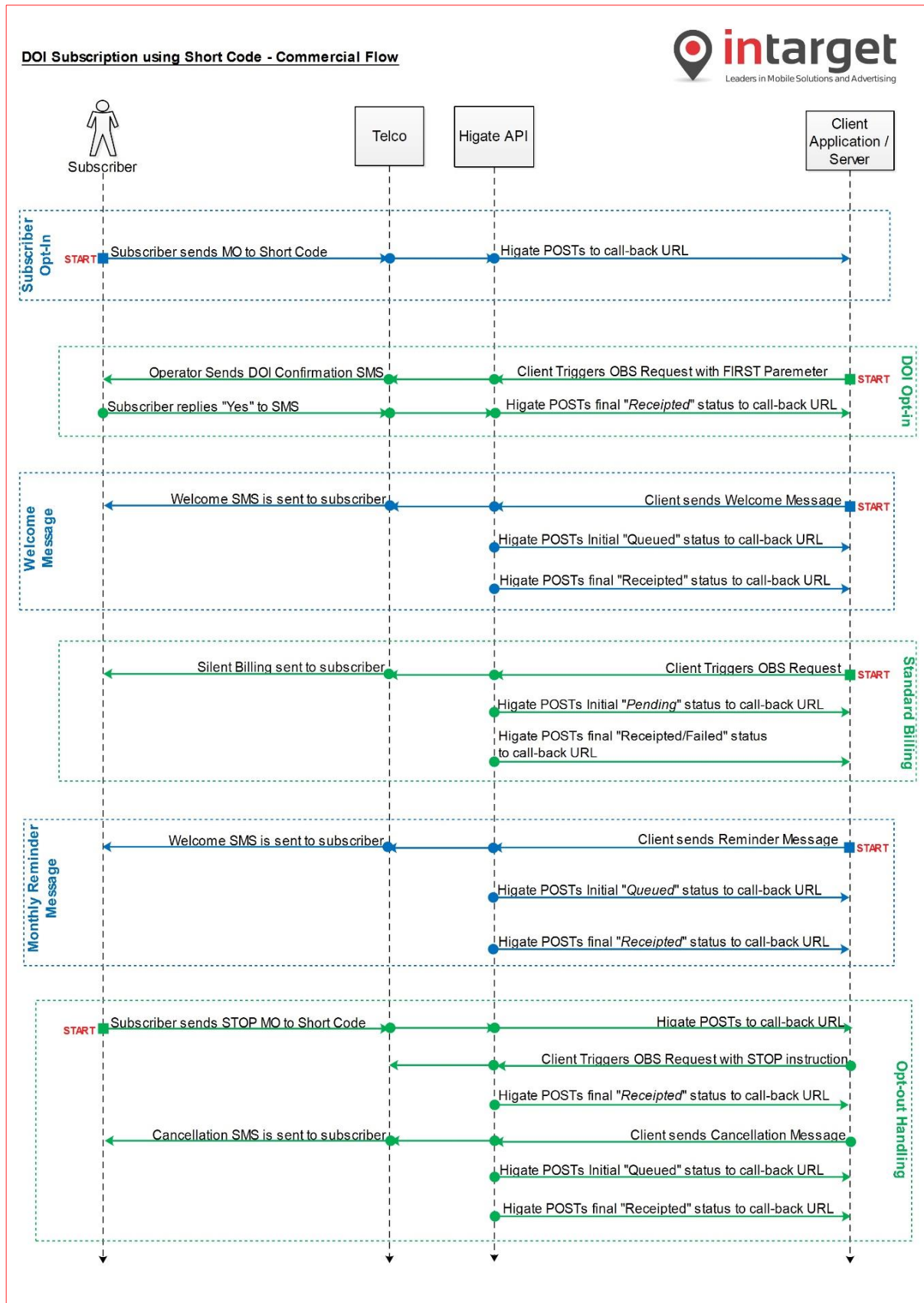
The DOI process was introduced by the South African Telco's to address the issue of unauthorised billing of its subscribers and was effectively enforced from 2013. All online billing must pass through this system and must adhere to the respective Telco's billing rules. More information on this topic can be retrieved from the above support page. Alternatively, you can contact our compliance team who can assist you with any compliance related queries on:

compliance@intarget.mobi

2. Acronyms & Abbreviations

Acronym / Abbreviation	Description
MT	Mobile Terminating Text based SMS Channel
MO	Mobile Originating Text based SMS Channel
SMS	Short Message Service Text based SMS Channel
PSMS	Premium Short Message Service Text based SMS Channel
DOI	Double Opt-In Text based SMS and USSD Channel
MSISDN	Mobile Station International Subscriber Directory Number Cell phone Number
API	Application Programming Interface Technical integration
DLR	Deliver Receipt that is sent to the nominated call back URL providing status details
ACK	Acknowledgement (in reference to API communications)
Call-back URL	The web address that Higate will send notifications, status updates and etc.

3. Process Flow – Commercial



The above flow highlights the commercial flow for using PSMS and highlights the life cycle of a subscriber.

Subscriber Opt-in

The subscriber sends a keyword to your short code which is then routed to your nominated call back URL.

DOI Opt-in

Your application then triggers an OBS request including the trigger parameter which starts the whole process. Once we (Higate) receives the request, it is sent on to the Telco. The Telco in turn then sends a SMS asking the subscriber to confirm the subscription. Assuming the subscriber accepts the DOI message, the result is then sent back to Higate and in turn to your call back URL. The subscriber is now active and daily/weekly/monthly billing can commence.

Welcome Message

Once the subscriber has accepted the DOI message and you have received the confirmation, the DOI rules require that you send a normal SMS MT message welcoming the subscriber to your service, confirming the billing amount and frequency and lastly, information on how to opt-out from the service. This message is only sent once and only with a new subscriber.

Standard Billing

This is after the DOI process has been completed, your application will send daily/weekly/monthly OBS requests which then bills the subscriber for the duration that they are opted into your service.

Monthly Reminder Message

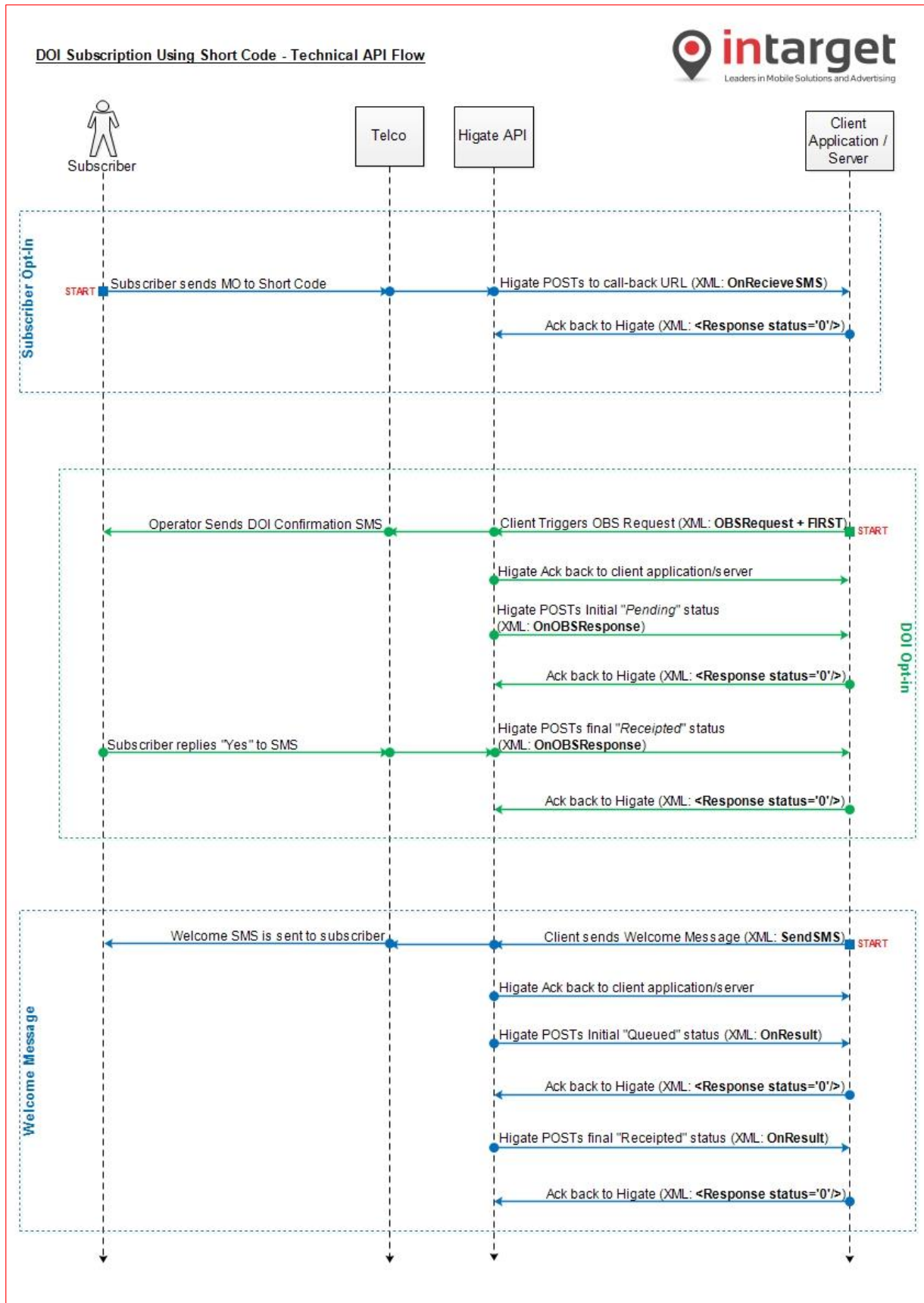
The monthly reminder message is sent once a month and is a normal SMS MT that reminds the subscriber that they are subscribed to your service at x cost per day/week/month and also carries instructions for opting out should they wish to. This message is only sent once a month to existing subscribers.

Opt-out Handling

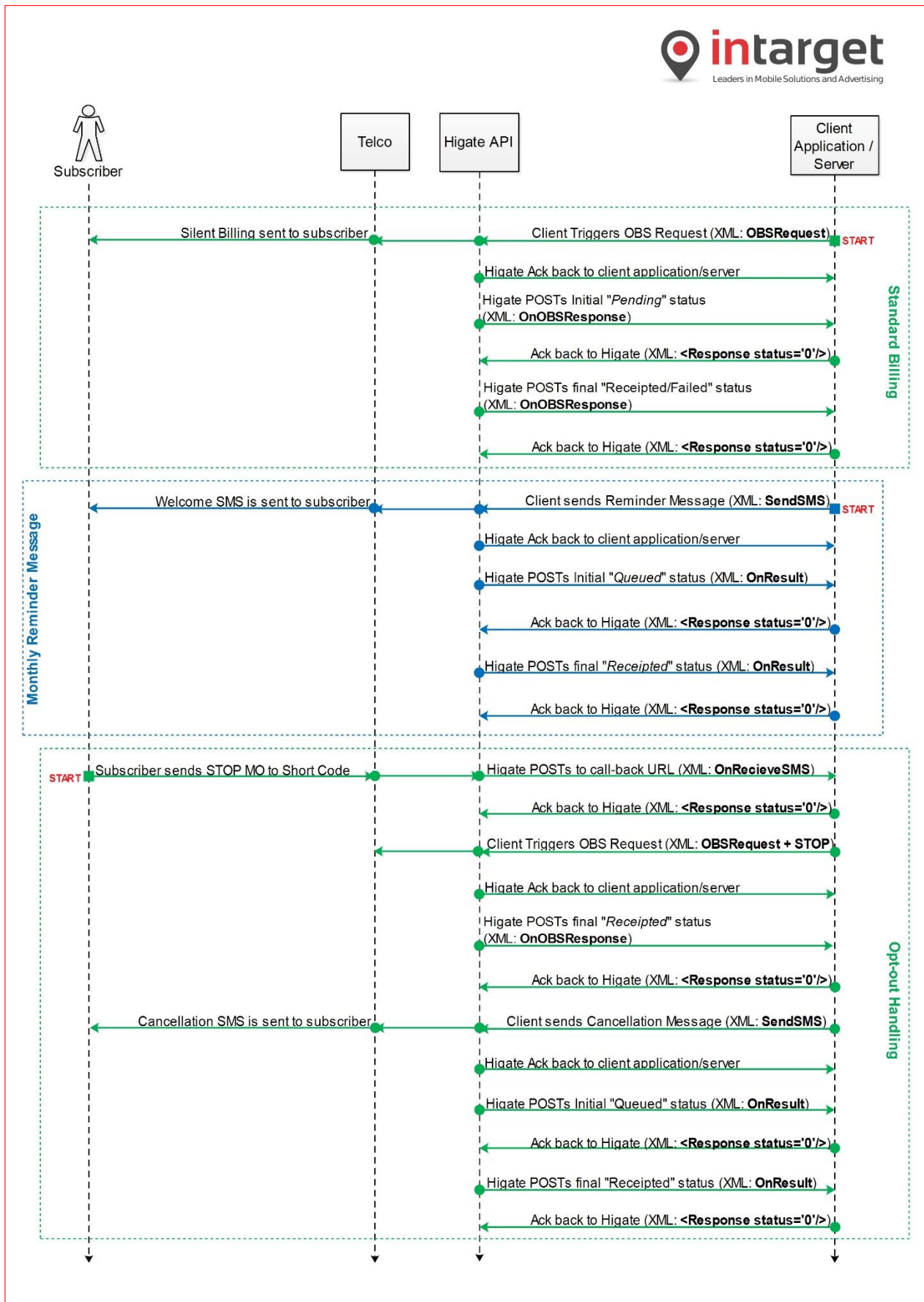
Once a subscriber decides that they want to stop the subscription, they send a keyword (STOP) to the short code which is routed to your system. Your system will need to recognise this keyword and then trigger an OBS request with the stop parameter which then stops the service on Telco level.

You are also required to send a standard SMS MT to the subscriber confirming that the subscription has been cancelled and the subscriber should be deleted from your internal databases.

4. Process Flow – Technical



Technical Flow Continued...



The above flow covers the technical aspects of the DOI process. The below mentioned XML Schemas can be seen under the XML Examples section (Page 10).

Subscriber Opt-in

The subscriber sends a SMS MO keyword to your short code which is then routed (HTTP POST) to your nominated call back URL via the “**OnReceive**” XML Schema. This schema provides information on the MSISDN, date/time stamp, Network ID, Short Code Number and Keyword.

Your application then responds to the Higate POST with the generic status response (**ACK**) to confirm that the POST has been received. The **ACK** is an important element as this is confirmation to Higate that the POST has been received. Failure to respond to Higate with this can lead to errors and Higate will automatically stop POSTs after a time period until the correct responses are been received.

DOI Opt-in

Your application then triggers an OBS request using the “**OBSRequest**” Schema which includes your login and product details. An additional parameter is also used to notify Higate that the subscription request is new and that it needs to trigger the DOI process with the Telco. This parameter is commonly referred to as the “**FIRST**” parameter.

The Higate platform will respond asynchronously with the **ACK** and will also provide additional information such as the Sequence Number which is a unique message identifier within the Higate platform and is used for tracking purposes. This response is separate from the DLR that is sent to your call back URL and is only a confirmation that the request has been received for processing. The Actual status of the transaction is sent to your call back URL.

Once this has been received, Higate then POSTs a status update to your nominated call back URL with the “**OnOBSResponse**” XML schema which provides additional information and the initial status of “*pending*” which means the transaction is still been handled by the Telco and Subscriber handset. Once the DOI has been completed (*Received* or *Failed*), an additional POST is sent to your call back URL then changing the status to “*Received*” if the charge was completed successfully or failed if any problems has occurred or the subscriber has insufficient funds, A status code and error code is always sent with the final status update and all status/error codes are available on the Client Support Page. Also note that the **ACK** must be sent by your application on both the initial POST and final POST.

Welcome Message

Once the subscriber has accepted the DOI message and you have received the confirmation POST as status “*Received*”, your application needs to send a standard SMS MT which is done with the “**SendSMS**” XML Schema, like the OBS request, your login credentials and message content is sent through this. The content refers to the message copy that is used to welcome the subscriber and is not your actual media content. An example can be found under the message copy section (Page 14).

Just like the OBS request, Higate will provide an ACK with the sequence number and will POST the status result of the SMS MT to your nominated call back URL with the “**OnResult**” XML schema. Both an initial POST will be done as well as a final status update on the POST will be sent. As before, your application must **ACK** both POSTs. This part of the process will also provide you confirmation that the Welcome message has been successfully sent to the subscriber.

Standard Billing

Once opt-in and the welcome message is complete. Your application will need to send an OBS request each day (or depending your products billing frequency) when billing must occur. This is done using the “**OBSRequest**” schema and must not include the FIRST parameter as this parameter is only used to trigger the DOI process and once the subscriber is subscribed, it is no longer required. Remember that billing is done by your application and is not an automated function of the Higate platform. This also applies to the DOI process which is not repeated once the subscriber has gone through the process the first time, unless they opt out and wish to re-join your service.

As before, Higate will asynchronously respond to your POST and will provide initial and final status updates to your call back URL and your application will need to provide the **ACK** response in each event. Your billing requests should be done in line with your product registration and no retries should be attempted if the status returns an insufficient funds error as this will be charged on your transaction fees.

Retries may only be done under certain conditions which relate to other errors. These errors can be found under the client support page which also provides steps for trouble shooting the error. Should you receive an error that you need assistance in understanding, you can log a ticket with the support desk who will assist you with the error.

Monthly Reminder Message

The monthly reminder message is sent once a month and is a normal SMS MT that reminds the subscriber that they are subscribed to your service at x cost per day/week/month and also carries instructions for opting out should they wish to. This message is only sent once a month to existing subscribers. Further information is available under the message copy section (page 14).

Opt-out Handling

Once a subscriber decides that they want to stop the subscription, they send a keyword (STOP) to the short code which is routed to your call back URL with the “**OnRecieveSMS**” XML schema. The schema will contain a content field with the keyword STOP (variations of this should also be taken into account and seen as a stop instruction from the subscriber). Your application must then provide the ACK back to Higate.

Once you have received this, your application needs to send an OBS request (as though you are billing) but must include the “**STOP**” parameter. This STOP parameter tells Higate to then terminate/stop the subscription on Telco level. An example of this can be found under the XML examples section (Page 10).

In addition to the STOP instruction. Once done, a normal SMS MT must be sent to the subscriber confirming that the subscription has been stopped and no further billing will take place. This is done with the “**SendSMS**” XML schema.

As with the previous processes mentioned, status updates will be sent to your call back URL and all will require the ACK from your application.

At this point, you should also remove the subscribers MSISDN number from your database and this will conclude the life span of that subscriber and ensure proper compliance to the DOI business rules.

5. Important Information

Some important information to note on the above flows:

1. A maximum number of retries per subscriber is limited to 3, after this, the error code that is received will indicate that the retry interval has been exceeded and no further attempt should be done within the prescribed billing interval.
 2. All OBS products are registered through the “Product Portal” and the XML requests must contain the same information that has been registered. Access to the portal is done via your Higate Web interface and the credentials will be supplied by your account manager.
 3. The requirement for the ACK is mandatory and failure to respond correctly to any POST will result in Higate suspending the login until what is regarded as an error is resolved. This is a protection feature and will be tested during your integration process.
 4. All Vodacom requests must have the flag element set to a value of 512. This only applies to Vodacom subscribers.
-

6. XML Examples

Note that details pertaining to the username, password, service code, reply tag are listed in the routing configuration that is supplied by the Account Manager. Please refer to the main API documentation for configurable fields within the XML. The below serves as examples only.

```
<Message>
  <Version Version="1.0"/>
  <Request Type="SendSMS" RefNo="123456">
    <UserID>USERNAME</UserID>
    <Password>PASSWORD</Password>
    <SendSMS ToAddr="27613177895"
      Validity="00020000"
      Service="SERVICECODE"
      Flags="0"
      DataCoding="0">
    <Reply Tag="449"/>
    <AdultRating>0</AdultRating>
    <Content Type="TEXT">Message content</Content>
  </SendSMS>
</Request>
</Message>
```

SendSMS - Sending a standard SMS MT

```
<?xml version="1.0" ?>
<Message>
  <Version Version="1.0"/>
  <Response Type="OnReceiveSMS">
    <SystemID>Higate</SystemID>
    <UserID>USERNAME</UserID>
    <Service>SERVICECODE</Service>
    <OnReceiveSMS
      SeqNo="1234"
      Sent="1232815567"
      FromAddr="27123456789"
      ToAddr="12345"
      ToTag=""
      Value="0"
      NetworkID="2"
      AdultRating="0">
      <Content Type="TEXT">Message copy/Keyword</Content>
    </OnReceiveSMS>
  </Response>
</Message>
```

OnReceiveSMS – Receiving a SMS MO

```
<Message>
<Version Version="1.0"/>
<Request Type="OBSRequest" RefNo="123456789">
  <UserID>USERNAME</UserID>
  <Password>PASSWORD</Password>
  <OBSRequest Validity="00020000"
    Flags="0">
    <Ticket Type="Mobile"
      OBSService=""
      Service=" SERVICECODE"
      SubService=""
      ChargeAddr="27613177895"
      Description="Wallpapers and Tones"
      Value="100"/>
    <Subscr Started="2014-11-27 12:15:52 FIRST"
      Category="OBSPRODUCTNAME"
      Trigger=""/>
  </OBSRequest>
</Request>
</Message>
```

OBSRequest – OBS Request with FIRST Parameter (for starting a new subscription)

```
<Message>
<Version Version="1.0"/>
<Request Type="OBSRequest" RefNo="123456789">
  <UserID>USERNAME</UserID>
  <Password>PASSWORD</Password>
  <OBSRequest Validity="00020000"
    Flags="0">
    <Ticket Type="Mobile"
      OBSService=""
      Service=" SERVICECODE"
      SubService=""
      ChargeAddr="27613177895"
      Description="Wallpapers and Tones"
      Value="100"/>
    <Subscr Started="2014-11-27 12:15:52 STOP"
      Category="OBSPRODUCTNAME"
      Trigger=""/>
  </OBSRequest>
</Request>
</Message>
```

OBSRequest – OBS Request with STOP Parameter (for stopping a subscription)

```
<Message>
  <Version Version="1.0"/>
  <Request Type="OBSRequest" RefNo="123456789">
    <UserID>USERNAME</UserID>
    <Password>PASSWORD</Password>
    <OBSRequest Validity="00020000"
      Flags="0">
      <Ticket Type="Mobile"
        OBSService=""
        Service="SERVICECODE"
        SubService=""
        ChargeAddr="27613177895"
        Description="Wallpapers and Tones"
        Value="100"/>
      <Subscr Started="2014-11-27 12:15:52"
        Category="OBSPRODUCTNAME"
        Trigger=""/>
    </OBSRequest>
  </Request>
</Message>
```

OBSRequest – Standard OBS Request (After opt-in is completed)

```
<?xml version="1.0" ?>
<Message>
  <Version Version="1.0"/>
  <Response Type="OnOBSResponse" RefNo="123456789" SeqNo="2289859310">
    <SystemID>Higate</SystemID>
    <UserID>USERNAME</UserID>
    <Service>SERVICECODE</Service>
    <NetworkID>1</NetworkID>
    <Network ID="1" MCC="655" MNC="010"/>
    <Flags>0</Flags>
    <Result Code>9</Result Code>
    <Result Text>Pending</Result Text>
    <Err Code>0</Err Code>
    <Err Text></Err Text>
    <OnOBSResponse Type="XML">
      <OBS><Action>CONFIRMED</Action><Result>0</Result><Result Text>Success</Result Text><Param>
        <Billing Code></Billing Code>
        <Adult Rating>0</Adult Rating>
        <Category>OBSPRODUCTNAME</Category>
        <Descr></Descr>
        <Item ID></Item ID>
        <RxSeqNo>46243614</RxSeqNo>
        <Other>
          <Vodacom>
            <Subscr>
              <Started>2014-07-29 14:54:13</Started>
            </Subscr>
            <Product Name= ProductName ' ID='2762' BillingFreq='Day' ServiceID='INT02762' Activation=' ' />
          </Vodacom>
        </Other>
      </Param>
      <Subscr Category= 'OBSPRODUCTNAME' Started='2014-07-29 14:54:13' />
    </OBS>
  </OnOBSResponse>
</Response>
```

OnOBSResponse – Status of a OBS transaction that is received on the client call back URL

```
<?xml version="1.0" ?>
<Message>
  <Version Version="1.0"/>
  <Response Type="OnResult" TOC="SMS" RefNo="123456789" SeqNo="2289859312">
    <SystemID>Higate</SystemID>
    <UserID>USERNAME </UserID>
    <Service>SERVICECODE</Service>
    <NetworkID>2</NetworkID>
    <Network ID="2" MCC="655" MNC="010"/>
    <ErrCode>0</ErrCode>
    <ErrText>SMPP Submit Error</ErrText>
    <OnResult
      Flags="0"
      Code="6"
      SubCode="0"
      Text="SMPP Submit Error"/>
  </Response>
</Message>
```

OnResult – Status result of a SMS MT sent back to the client call back URL

```
<Response status_code='0'>
  <Data name='msg_generic_rsp'>
    <field name='msg_no' value='1' />
    <field name='seq_no' value='2289859312' />
  </Data>
</Response>
```

Higate Success Response -
ACK Response to Client POST

```
<Response status='0'/>
```

Client Success Response –
Client ACK Response to Higate POSTs on the call back URL

7. Message Copy Examples

Welcome Message:

The welcome message must be a single message and may not contain any line breaks or carriage returns. The welcome message must begin with the word "Welcome" and then contain only the following additional information:

- a) The name of the service,
- b) The pricing information,
- c) A customer support number,
- d) Instructions for terminating the service, and
- e) (Optionally) a link to a WAP landing page or a web page describing the service.

Example:

Welcome: U r subscribed to (service name) @ R___/day
(Cost + billing frequency). To unsubscribe SMS stop to
(Short-code) Helpline number 011xxxxxxx.

Reminder Message:

A reminder SMS message must be sent to a subscription or notification service customer within 30 days of the initiation of the service, and once per calendar month thereafter. This message is referred to as the "reminder message". The customer must not be charged for any reminder message.

The reminder message must be a single message for each service the customer is subscribed to, and must not contain any line breaks or carriage returns. The reminder message must begin with the word "Reminder" and then contain only the following additional information:

- a) The name of the service,
- b) The pricing information,
- c) A customer support number,
- d) Instructions for terminating the service, and
- e) (Optionally) a link to a WAP landing page or a web page describing the service.

Example:

Reminder: You are subscribed to (Service name)@R---
/(Cost +billing frequency). To unsub, sms STOP to short-
code. For help call customer care number 011xxxxxxx.

8. Frequently Asked Questions

Q: Where do I get my account login credentials, service codes, reply tags and etc. that are required for the XML fields?

A: These details are provided to you in the routing configuration that is sent by your account manager or ticketman.

Q: Are there other configurable elements to the XML schema's used?

A: Yes, however, these are only provided in the main HTTP API documentation.

Q: Do we send any auto-renewal?

A: No, auto-renewal does not apply in South Africa. Once a subscriber has been subscribed to your service via the DOI process. Your application must send the billing requests in accordance to your billing interval.

Q: How often may we re-bill on failure?

A: Depending on the reason for failure, no more than 3 attempts per billing interval cycle. Please refer to the error handling guide on the support page for troubleshooting on errors.

Q: How many characters may the reference number in our submissions be?

A: Reference numbers should not exceed 10 characters.

Q: We are not receiving POSTs from the Higate platform, what could be the problem?

A: If you are on shared hosting, please check with your ISP that you are not been blocked on port 8888. Also check that the correct response is been sent back to Higate on POSTs. The technical / Service Delivery teams can assist you in checking message statuses.

Q: Do we have access to a test account?

A: Yes, your account manager will allocate a test account for testing applications.

Q: Do we need a call back URL for testing?

A: Yes, as this is necessary for programming logic on client side.

Q: Is HTTPS supported?

A: No, the Higate platform only supports standard HTTP.

Q: What billing intervals are supported?

A: Daily, Weekly, Monthly or Once-off billing is supported.

Q: Where is the Product Portal located?

A: The Product Portal is accessible through your Higate Web interface. Your login credentials for the Portal will be provided when your main account is activated. A guide is available to assist in registration, please refer to the Reference section (page 16)

Q: How do we know that a subscriber has accepted the DOI message and is now subscribed to our service?

A: The OBS transaction will change from a "Pending" status to "Receipted" status. This is your confirmation that the process has been completed successfully.

Q: What format must a MSISDN prefix follow for South Africa?

A: The standard normalisation for South African numbers is 27 (removing the zero) and should look like this: 27821239876

9. References

Client Support Page: <http://integrat.freshdesk.com/solution/categories/4000003081>

API Documentation: <http://integrat.freshdesk.com/solution/folders/4000011469>

Technical Information (Error Codes, Network ID's): <http://integrat.freshdesk.com/solution/folders/4000011470>

Fault Logging & Support: <http://integrat.freshdesk.com/solution/articles/4000054484>

Additional / Advanced Higate Information: <http://integrat.freshdesk.com/solution/articles/4000053161>

South African Telco Business Rules: <http://integrat.freshdesk.com/solution/folders/4000011536>

Compliance / Product Portal Guides: <http://integrat.freshdesk.com/solution/folders/4000011536>

10. Service Testing

Intarget will provide a test account for initial integration and testing while your application is still under development and an allocated Service Delivery Agent will assist in testing the whole process from opt-in to opt-out. Additional testing is done once the account is ready to go live.

Please note that testing requests must be sent to ticketman@intarget.mobi and a testing slot will be allocated for the following day. Also please note that any testing that exceeds more than one service will be chargeable. Your account manager will arrange these costs with you prior testing.

11. Technical Assistance / Escalations

All technical assistance requests must be logged with ticketman@intarget.mobi. Please note that as Intarget handles multiple territories and clients. We will require your account name and details on the issue been experienced. Any failure to do so will prolong the process of assistance to you.

As per your SLA agreement with your account manager, the below is an escalation route for fault logging queries:

Escalation Route	Contact Number	Contact Email
First Line Support / Ticketman	+ 27 82 511 7837	ticketman@intarget.mobi
NOC/Service Delivery Supervisor – Martin de Jager	+ 27 82 310 4136	martin@intarget.mobi
CTO – Marius du Plessis	+ 27 74 485 6025	marius@intarget.mobi

Please note that Intarget does not assist with development or testing queries after 4pm and on weekends/public holidays. Clients are required to always log a support request after hours and on weekends as well as contacting First Line Support and providing the ticket number.