Cellfind SDK
Technical Specification

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Contents

1. TECHNICAL OVERVIEW

2. Cellfind Client SDK

The Cellfind Client SDK is a set of Windows COM Automation objects that are packaged in an executable DLL called NMMPGSDK.DLL.

The object is named NMMPGSDK, and encapsulates all classes and methods required to communicate with Cellfind Web service. Thus the Web service is communicated with by means of standard COM interfaces.

The following SDK object interfaces are provided:

- IMPGSession – Controls the login session with the MPG;
- IBatchRequest – Defines a request for a batch of messages;
- ISender – Defines the sender details;
- IBatchInfo – An interface to all the properties of a submitted BatchRequest;
- IRequestIdentity - An interface to the properties that can be used to identity a request;
- IMessageRequestList – An interface to a collection of IRequestIdentity interfaces;
- IMessage – Defines a message to be requested;
- IOverrideProtocol – Defines an instruction to override the defined rule;
- IRecipient – Defines a recipient of a message;
- IAttachment – Defines a document attachment to a message;
- IMIMEData – Provides an interface to load and MIME a document;
- IMessageController – Provides an interface to draw report information from the MPG;
- IMessageIdentity – An interface to the properties that can be used to identity a message;
- IMessageDetail – An interface to all the properties of a message;
- IMessageList – An interface to a collection of IMessageDetail interfaces;
- IMessageStatus – An interface to the properties of a message's status information;
- IMessageStatusList – An interface to a collection of IMessageStatus interfaces;
- IReplyDetail – An interface to all the properties of a message reply;
- IReplyList – An interface to a collection of IReplyDetail interfaces;
- IRequestLog – An interface to all the processing details of a request batch;
- IRuleProcess – An interface to all the details of a single rule process;
- IRuleProcessLog – An interface to a collection of IRuleProcess interfaces;
- IRule – An interface to the details of a MPG Rule;
- IRuleList – An interface to a collection of IRule interfaces;
- ITemplate – An interface to all the details of a message template;
- ITemplateList – An interface to a collection of ITemplate interfaces;
- IMergeVariableList – An interface to a collection of merge variable names within a Template.

Cellfind SDK – Sending

The QA/TESTING URL is as follows:

http://cfwinqa.cellfind.co.za/mpgproxy/Service.asmx

The Live URL is as follows:

http://www.cellfindportal.co.za/mpgproxy/service.asmx

Login

Description

The login method is used to log into the Cellfind portal and retrieve a security token that needs to be passed to all SDK methods that require a token.

NOTE: If the security token is not used for a period of 20 minutes it expires, in which case a new token needs to be obtained by repeating the login function.

Method Parameters and return values

Parameter Name	Type	In/Out	Description
Username	String	In	The username with which to log into the Cellfind portal. This will be provided by the CELLFIND PORTAL Team
Password	String	In	The password associated with the supplied username. This will initially be provided by the CELLFIND PORTAL Team after which it can be changed via the CELLFIND PORTAL portal
SecurityToken	String	Return	The security token generated by the login function. If the username/password was not successfully matched to a user on the system an EMPTY string will be returned.

Send

Description

The send function is used to submit a batch of messages formatted as an XML document to the CELLFIND PORTAL SDK. This XML format allows for the sending of SMS and EMAIL messages. In the case of EMAIL messages attachments may be added to the message using the format specified in Appendix A - Attachment Format.

Batch submission also allows for improved performance where clients are submitting large volumes of data. The XML Document related to the Send function all

NOTE: System tests involving various network configurations have shown that batches of 50 messages yield the optimum performance result.

Method Parameters and return values

Parameter Name	Type	In/Out	Description
Token	String	In	The security token that was returned by a successful call to Login.
XMLStream	String	In	An XML string that adheres to the XML Document Specification as described in SendMessage.xsd
Compressed	Bool	In	This value has been left for backward compatibility and may be safely ignored
CompressedSpecified	Bool	In	This value has been left for backward compatibility and may be safely ignored
BatchInfo	String	Return	The function returns an XML string that adheres to the XML Document Specification as described in SendBatchInfo.xsd

SendSMSMessage

Description

A simple function allowing for quick and easy integration with the CELLFIND PORTAL SDK. As the name suggests the function can be used only to send SMS messages, however it's simplistic form makes it great for quick & easy integration projects.

Method Parameters and return values

Parameter Name	Type	In/Out	Description
Token	String	In	The security token that was returned by a successful call to Login.
RefNo	String	In	The client side reference number to assign to the SMS message. As this is a string field it can be any alpha numeric value.
PhoneNo	String	In	The cell phone number of the intended message recipient.
MsgType	String	In	Indicates the message template to use. Specify "DEF" to send a simple message.
Message	String	In	The text message to send to the recipient.
CostClass	String	In	The client side Cost Class to assign to the message. This is a user variable that is not used by the Cellfind portal it can be used for internal billing or any other client side data.
Priority	Int	In	An integer value in the range 0-3 (inclusive) denoting the priority of the message. See Appendix B - Message Priority.
SendSMSMessageResult	Long	Out	The unique message ID that was assigned to the created message. A value of -1 indicates a failure to store the message.
SendSMSMessageResultSpecified	Bool	Out	Indicates whether a SendSMSMessageResult value is available for reading.

GetMessageDetail

Description

Retrieves detailed information about a previously submitted message based on the message ID.

Method Parameters and return values

Parameter Name	Type	In/Out	Description
Token	String	In	The security token that was returned by a successful call to Login.
MessageID	Long	In	The unique message ID returned by any of the send methods.
MessageIDSpecified	Bool	In	Indicates whether a message ID has been specified. This value should always be true.
MessageDetail	String	Return	An XML string adhering to the XML Document Specification described in GetMessageDetail.xsd.

GetMessageStatus

Description

Retrieves only the message state information related to the supplied message ID.

Method Parameters and return values

Parameter Name	Type	In/Out	Description
Token	String	In	The security token that was returned by a successful call to Login.
MessageID	Long	In	The unique message ID returned by any of the send methods.
MessageIDSpecified	Bool	In	Whether a value was specified for message ID, this value will always be true.
MessageStatus	String	Return	An XML string adhering to the XML Document Specification described in GetMessageStatus.xsd

GetOSMOMessages

Description

Retrieves a listing of outstanding (not yet retrieved) mobile originator messages associated with the user. Mobile originated (MO) messages in this case refers to any received message including replies and new incoming messages. The retrieved messages will include only replies via SMS.

Method Parameters and return values

Parameter Name	Type	In/Out	Description
Token	String	In	The security token that was returned by a successful call to Login.
OSMOMessages	String	Return	An XML string adhering to the XML Document Specification as described in GetOSMOMessages.xsd

GetOSROMessages

Description

Retrieves a listing of outstanding (not yet retrieved) messages that were sent to the short code associated with user. The retrieved messages will include only messages received via SMS.

Method Parameters and return values

Parameter Name	Type	In/Out	Description
Token	String	In	The security token that was returned by a successful call to Login.
OSROMessages	String	Return	An XML string adhering to the XML document specification as described in GetOSROMesssages.xsd

GetOSReplies

Description

Retrieves a listing of all outstanding (not previously retrieved) messages that are replies to messages that have been sent via the Cellfind portal. The retrieved messages will include replies via any of the supported protocols.

Method Parameters and return values

Parameter Name	Type	In/Out	Description
Token	String	In	The security token that was returned by a successful call to Login.
ClientApp	String	In	The client application that was specified by the sender when the original message was submitted. An empty string will retrieve ALL messages.
OSReplies	String	Return	An XML string adhering to the XML Document Specification described in GetOSReplies.xsd

GetOSSMSReplies

Description

Retrieves a listing of all outstanding (not previously retrieved) messages that are replies to SMS messages that have been sent via the Cellfind portal. The retrieved messages will include only replies received via SMS.

Method Parameters and return values

Parameter Name	Type	In/Out	Description
Token	String	In	The security token that was returned by a successful call to Login.
OSSMSReplies	String	Return	An XML string adhering to the XML Document Specification as described in GetOSSMSReplies.xsd.

GetOSStatus

Description

Retrieves a listing of outstanding (not previously retrieved) messages that were submitted to the Cellfind portal and have been processed by the Cellfind portal. The current status of each message is included. The retrieved messages will include messages for all protocols supported by the Cellfind portal.

Method Parameters and return values

Parameter Name	Type	In/Out	Description
Token	String	In	The security token that was returned by a successful call to Login.
ClientApp	String	In	The client application that was specified by the sender when the original message was submitted. An empty string will retrieve ALL messages.
OSStatus	String	Return	An XML string adhering to the XML Document Specification as described in GetOSStatus.xsd.

GetStatus

Description

Retrieves the status of the supplied security token value. If a valid token is passed this function will also update the status of the token to indicated that it is in use.

Method Parameters and return values

Parameter Name	Type	In/Out	Description
Token	String	In	The security token that was returned by a successful call to Login.
GetStatusResult	Long	Out	The status of the security token • 0 - Logged In • 1 - Session Expired • 2 - Logged Out
GetStatusResultSpecified	Bool	Out	Indicates whether a GetStatusResult value was specified. This value will always be TRUE.

GetTemplates

Description

Retrieves a listing of all templates that the user associated with the token has access to.

Method Parameters and return values

Parameter Name	Type	In/Out	Description
Token	String	In	The security token that was returned by a successful call to Login.
Protocol	String	In	The name of the protocol for which templates should be retrieved. An empty string will return all templates for all protocols.
LastUpdate	String	In	A date string of the format yyyy-MM-dd, indicating that only templates update on or after the given date should be retrieved. An empty string will return all templates.
Templates	String	Return	An XML string adhering to the XML Document Specification as described in GetTemplates.xsd.

Logout

Description

This method will terminate the session associated with the security token invalidating all further actions attempting to use the token.

Method Parameters and return values

Parameter Name	Type	In/Out	Description
Token	String	In	Security Token
LogoutResult	Long	Out	The result of the logout operation • -1 - The supplied token is invalid. • 2 - The supplied token has been logged out.
LogoutResultSpecified	Bool	Out	Indicates that a value has been specified for LogoutResult. This value will always be true.

SendNS

Description

The SendNS method functions in almost exactly the same way as Send. The only difference is that instead of requiring a security token, the username and password can be passed directly to the function.

Method Parameters and return values

Parameter Name	Type	In/Out	Description
UserName	String	In	The username of the person sending the message batch.
Password	String	In	The password of the person sending the message batch.
XMLStream	String	In	An XML string that adheres to the XML Document Specification as described in SendMessage.xsd
Compressed	Bool	In	This value has been left for backward compatibility and may be safely ignored
CompressedSpecified	Bool	In	This value has been left for backward compatibility and may be safely ignored
BatchInfo	String	Return	The function returns an XML string that adheres to the XML Document Specification as described in SendBatchInfo.xsd

SendSMSMessageNS

Description

The SendSMSMessageNS method functions in almost exactly the same way as SendSMSMessage. The only difference is that instead of requiring a security token, the username and password can be passed directly to the function.

Method Parameters and return values

Parameter Name	Type	In/Out	Description
UserName	String	In	The username of the person sending the message batch.
Password	String	In	The password of the person sending the message batch.
RefNo	String	In	The client side reference number to assign to the SMS message. As this is a string field it can be any alpha numeric value.
PhoneNo	String	In	The cell phone number of the intended message recipient.
MsgType	String	In	Indicates the message template to use. Specify "DEF" to send a simple message.
Message	String	In	The text message to send to the recipient.
CostClass	String	In	The client side Cost Class to assign to the message. This is a user variable that is not used by the Cellfind portal it can be used for internal billing or any other client side data.
Priority	Int	In	An integer value in the range 0-3 (inclusive) denoting the priority of the message. See Appendix B - Message Priority.
SendSMSMessageResult	Long	Out	The unique message ID that was assigned to the created message. A value of -1 indicates a failure to store the message.
SendSMSMessageResultSpecified	Bool	Out	Indicates whether a SendSMSMessageResult value is available for reading.

Appendix A - Attachment Format

Attachments within the CELLFIND PORTAL XML structure are stored in an XML Element structure as indicated below:

```xml
<Attchmnt>
        <MIMEData Name="SomeFile.txt">
                <Data>xUaGlzIGlzIGEgdGVzdCBGQ</Data>
        </MIMEData>
</Attchmnt>
```

The inner text of the "Data" element holds the content of the attachemnt encoded as a Base64 string. Each "Attchment" element can hold only one attachment item.

Appendix B - Message Priority

Messages that are submitted to the Cellfind portal may be prioritised in order to ensure faster delivery. The available message priorities are listed below.

Priority Value	Priority Level
0	Lowest priority intended for bulk messages
1	Low priority
2	High priority
3	Highest priority intended for messages that need to be delivered immediately.

Appendix C - XML Element Glossary

Following is a list of all the XML elements that may occur in the various XML documents related to the CELLFIND PORTAL SDK and their respective meanings.

Element Name	Description
Attchmt	An attachment.
AttchmtList	A list of attachments to associate with a MsgRqst (EMAIL protocol only)
Data	Contains the BASE64 encoded data of an attachment.
MIMEData	MIMEData section of a message attachment.
MOMessage	Mobile Originated message information.
MPGMessageStatus	Details about the status of a message.
MPGMsgDetail	Details about a message.
MrgVar	A merge variable that is part of a template.
MrgVarList	The list of merge variables for a given template.
MsgIdent	Information to uniquely identify a message.
MsgRqst	A single message request containing the information needed to create a deliverable message.
MsgRqstList	A list of message request that should be delivered by the Cellfind portal.
MsgStat	Status information related to a message.
OvrdProt	Information related to the protocol that should be used to deliver the message.
Preview	The template as a text string.
Prot	The protocol that the attachment should be associated with.
ProtList	The list of protocols that the attachment should be associated with.
Rcpt	Information related to a message recipient.
RcptList	The list of recipients that he message is intended for.
ReplyDet	Information related to a reply message.
ReplyMsg	Information related to a reply message.
ROAttachmentList	List of attachments received with a reply (EMAIL protocol only).
ROMsgDet	Recipient Originator Message Detail.
RqstIdent	Information that can uniquely identify a message request.
RqstList	The list of message requests that were processed.
Sndr	Information related to a message sender.
Template	The BASE64 encoded version of the template.
Tmpl	Message Template data.
TmplList	A list of message templates.

Appendix D - XML Attribute Glossary

Following is a list of all the XML attributes used in the various XML documents used by the CELLFIND PORTAL SDK.

Attribute Name	Description
BatchID	The unique ID assigned to a message batch.
BatchNo	The batch number that is associated with a message batch request.
CellNo	The cell phone number of a sender or recipient.
ClientApp	The client application that submitted a message.
CostCentre	The client cost centre that should be billed for the message. This data is for use by client applications.
Descr	The description an information item.
EMail	The email address of a sender or recipient.
FaxNo	NOT AVAILABLE.
GenDate	The date on which a given information item is generated.
GenTime	The time at which a message was generated.
GenTime	The time at which a given information item is generated.
LastUpd	The last date and time at which an item was updated.
MergeVars	The merge variables to use when building a message.
MessageID	The unique id of a message.
Msg	The message text of a given message.
MsgID	The unique id of a message.
Name	The name of an information item.
Originator	The address or number from which an incoming message was received.
Priority	The priority to associate with a message request.

Prot	The protocol used to deliver / receive a message. Either EMAIL or SMS.
Prot	The protocol used to deliver / receive a message. Either EMAIL or SMS.
Rcpt	The recipient address either a cell phone number or email address.
RecDate	The date on which a message was received.
RecTime	The time at which a message was received.
Ref	A reference assigned to the message by the client.
ReplyID	The unique ID of a reply message.
ReplyMsg	The message text contained in a reply message.
ReqID	The unique ID of a message.
ROMessageID	The unique ID of a received message.
SchedTime	The time at which a message should be delivered.
Seq	The sequence number of the reply message.
StatText	The descriptive text of the message status.
StatTime	The time at which the message status was updated.
Status	The integer value associated with the message status.
Subj	The subject of a message, only for EMAIL.
SubTime	The time at which a message was submitted.
TelNo	The telephone number of a sender or recipient.
Template	The name of a message template.
TemplateName	The template to use for the message, for simple messages the template is always "DEF".
UserName	The username associated with a given request / message.

Appendix E - Sample SMS Message Request

Below is a sample of a SMS message request that can be sent to the Cellfind portal via Send or SendNS.

```xml
<MPGBatchRequest BatchNo="BNO12345" GenTime="2009-07-19 10:59:59.000" >
 <MsgRqstList>
  <MsgRqst ClientApp="ClientApp" Ref="Reference" Subj="Subject" Priority="3">
   <RcptList>
    <Rcpt Name="John Doe" CellNo="0831234567" Email="john@doe.co.za" TelNo="08341234567" />
   </RcptList>
   <OvrdProt Prot="SMS" Template="DEF" MergeVars="MessageText=Hello world"/>
  </MsgRqst>
 </MsgRqstList>
 <Sndr CellNo="0831234567" Email="john@doe.co.za" Name="John Doe" TelNo="0831234567"></Sndr>
</MPGBatchRequest>
```

NOTES

- Before submitting the above string to the Cellfind portal all XML characters need to be escaped.

- Where the message text contains XML characters these need to be esacped prior to the XML string itself.

- The **MessageText=** section as shown in the MergeVars section above is not required for messages that use the "DEF" template.

Appendix F - Sample EMail Message Request

Below is a sample of an email message request that can be sent to the Cellfind portal via Send or SendNS.

```xml
<MPGBatchRequest BatchNo="IMSO10838" GenTime="2010/02/25 11:08:38 AM">
 <MsgRqstList>
  <MsgRqst ClientApp="IMS" Subj="Test email" Ref="REFERENCE" Priority="2" >
   <OvrdProt Prot="EMAIL" Template="DEF" MergeVars="MessageText=Test email message" />
   <RcptList>
    <Rcpt Name=", " Email="johndone@somewhere.com" />
   </RcptList>
   <AttchmtList>
    <Attchmt>
     <MIMEData Name="Attachment.txt">
      <Data>YXR0YWNobWVudA==</Data>
     </MIMEData>
     <ProtList>
      <Prot Prot="EMAIL" Seq="0" />
     </ProtList>
    </Attchmt>
   </AttchmtList>
  </MsgRqst>
 </MsgRqstList>
 <Sndr Name="Someone" Email="Someone@somewhere.com" CellNo="0831234567" TelNo="0211234567" />
</MPGBatchRequest>
```

NOTES

- Before submitting the above string to the Cellfind portal all XML characters need to be escaped.

- Where the message text contains XML characters these need to be esacped prior to the XML string itself.

- The **MessageText=** section as shown in the MergeVars section above is not required for messages that use the "DEF" template.

Appendix G - SOAP Envelope for SendNS

The following XML is a soap envelope that may be submitted to activate the SendNS request and the response received.

SOAP Envelope

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:tem="http://tempuri.org">
 <soapenv:Header/>
 <soapenv:Body>
  <tem:SendNS>
   <tem:UserName>username</tem:UserName>
   <tem:Password>password</tem:Password>
   <tem:XMLStream>
     &lt;MPGBatchRequest BatchNo=&quot;BNO12345&quot; GenTime=&quot;2009-07-19 10:59:59.000&quot;
&gt;
     &lt;MsgRqstList&gt;
     &lt;MsgRqst ClientApp=&quot;ClientApp&quot; Ref=&quot;Reference&quot; Subj=&quot;Subject&quot;
Priority=&quot;3&quot;&gt;
     &lt;RcptList&gt;
     &lt;Rcpt Name=&quot;John Doe&quot; CellNo=&quot;0831234567&quot;
Email=&quot;john@doe.co.za&quot; TelNo=&quot;08341234567&quot; /&gt;
     &lt;/RcptList&gt;
     &lt;OvrdProt Prot=&quot;SMS&quot; Template=&quot;DEF&quot; MergeVars=&quot;MessageText=Hello
world&quot;/&gt;
     &lt;/MsgRqst&gt;
     &lt;/MsgRqstList&gt;
     &lt;Sndr CellNo=&quot;0831234567&quot; Email=&quot;john@doe.co.za&quot; Name=&quot;John
Doe&quot; TelNo=&quot;0831234567&quot;&gt;&lt;/Sndr&gt;
     &lt;/MPGBatchRequest&gt;
   </tem:XMLStream>
   <tem:Compressed>0</tem:Compressed>
  </tem:SendNS>
 </soapenv:Body>
</soapenv:Envelope>
```

SOAP Response

```xml
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <soap:Body>
    <SendNSResponse xmlns="http://tempuri.org">
      <SendNSResult><![CDATA[<MPGBatchInfo RecTime="2010-02-15 16:03:48.923" BatchID="134026903"
BatchNo="BNO012345"><RqstList><RqstIdent ReqID="418597767" Ref="Reference"><Rcpt Name="John Doe"
CellNo="0831234567" Email="john@doe.co.za" TelNo="0831234567" MergeVars="None"
/></RqstIdent></RqstList></MPGBatchInfo>]]></SendNSResult>
    </SendNSResponse>
  </soap:Body>
</soap:Envelope>
```