**Listener API Messenger API**

**Version 1.0.1**

**(Project Isigijimi)**



**Oryx Systems CC**

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**18 June 2019**

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# Document Change Log

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Responsible Person** | **Change Description** | **Document Version** |
| 2019-06-19 | Denis Cloete | Original document created | 1.0.1 |
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# Project Details

ADS: Auto Dial System, this system is an API the Listener integrates to which manages the Auto-Dial to the Client.

VA: Virtual Agent, this is the management of the dial out process.

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| --- | --- |
| **Project Name** | Listener Messenger API Version 1 |
| **Project Type** | New Initiative |
| **Project Start Date** | 18 June 2019 |
| **Project End Date** |  |
| **Project Sponsor** | RX Business |
| **Primary Driver** | Mandatory |
| **Secondary Driver** | Management |
| **Division** | Listener Comms |
| **Project Manager/Dept** | Denis / Comms Development |

# GLOSSARY OF TERMS

| **Term/Acronym** | **Definition** |
| --- | --- |
| SMS | This is the standard message sent to a client to their mobile phone. |
| SMS CONTACTS | This is the list of contacts that can be configured within Listener that will receive automatic SMS from the RX Comms, when signals are processed. Also known as the Pagers |
| MESSAGING GROUPS | On each SMS Contact the group of alarm types can be configured to define which signals must be sent to the SMS Contact when processed by RX Comms. Also known as Pager Groups |
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# PROJECT OVERVIEW

Currently Listener provides its own Gateway to send SMS Messages created by the RX Comms and other manual processes within Listener. Listener also manages its own Yap-Yap notifications that work in conjunctions with the SMS layer. Client have either created their own Mobile Application or want to manage their own messaging from Listener. This projects looks to provide 3rd party access to the Listener Messaging component ( SMS ). This project defines the requirements of this process, and what levels of integration will be available.

This project should have no impact on the current running of the Coms 9 and RX Comms. This project looks to allow 3rd Parties to send SMS generated messages through their own systems.

If 3rd Party Messaging is enabled, the SMS Manager will send the messages to a cloud hosted database, where 3rd Parties can access these messages through a web service.

[APPENDIX-B, for the project diagram](#_Appendix_B_–).

# KEY ASSUMPTIONS AND CONSTRAINTS

Please make note of the following Constraints and Assumptions.

|  |  |
| --- | --- |
| Assumptions and Constraints | |
| 1 | **CONSTRAINT**: When 3rd Party Messaging is enabled, the 3’rd party must handle all SMS messages. No fail over will be provided by Listener SMS Gateway or Modem to send SMS’s. |
| 2 | **ASSUMPTION**: The client will require internet access, and break out to the RX Cloud Messaging Server, to allow SMS Manager to send the messages to a centrally cloud hosted database. Any break in internet or firewall restrictions will result in messages not getting to the hosted server; these messages will be held until the internet connectivity is restored. Internet connectivity and breakout is the responsibility of the Client. |
| 3 | **ASSUMPTION**: We will allow 3rd Party SMS Integration and Yap-Yap run to run at the same time. This allows for business processes where a Yap-Yap notification is sent, and only if this is not delivered will an SMS be sent. Also other messaging will run through Yap-Yap or the 3rd Party SMS messaging. |
| 4 | **ASSUMPTION**: All the necessary setups of sending messages by means of creating Message Contact and Message Groups will be done through the current Listener front end. This project does not address managing this from the 3rd Party through the API. |
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# USE CASE NARRATIVE

[Licensing of 3rd Party Notification](#_Licensing_of_3rd)

[Cloud Message Database](#_Cloud_Message_Database)

[Configuration and Dashboard of 3rd Party API](#_Configuration_and_Dashboard)

[Automated Invoicing of Message Count into Listener](#_Automated_Invoicing_of)

[Messages sent to Cloud Database.](#_Messages_sent_to)

[Web-Service for messages for 3rd party from Cloud Database](#_Web-Service_for_messages)

[3rd Party Web-Service Token](#_3rd_Party_Web-Service)

[Message Status Update](#_Message_Status_Update)

[Listener Message Update](#_Listener_Message_Update)

[3rd Party request to clear all waiting messages older that X](#_3rd_Party_request)

# PROJECT DEPENDENCIES

None

# STAKEHOLDERS

|  |  |
| --- | --- |
| **Type** | **Description** |
| Internal | Oryx Business |
| External | Oryx Clients and 3rd Party |
|  |  |
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## Licensing of 3rd Party Notification into Listener

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | 1 | | |
| Use Case Name: | Licensed for 3rd Party Module at Oryx Systems, at the client site. The SMS Manager must check for this license at the client site, this needs to be enabled for the client to select this option. | | |
| Created By: | Denis Cloete | Last Updated By: |  |
| Date Created: | 18/06/2019 | Date Last Updated: |  |

|  |  |
| --- | --- |
| Actors: | ORYX EMPLOYEE USER |
| Description: | In order for the 3rd Party Access to become active, the clients contract needs to be updated with the Messaging Service. The Licensing system will send this to the client so they can select this module. The Licencing SMS module needs to be have the following selections:   * Gateway * 3rd Party Only * 3rd Party with Yap-Yap * Modem * None |
| Preconditions: | The client does not have the 3rd Party Messenger Module active. |
| Postconditions: | The 3rd Party Messenger Module become is enabled at the client. |
| Normal Course: | Log into Oryx Listener Live.  Update the client contract with the 3rd Party Messenger Module  Licensing module to send the Licenses to the Client Site. |
| Alternative Courses: | Manually send the License to the Client Site. |
| Exceptions: |  |
| Includes: |  |
| Priority: |  |
| Frequency of Use: | Low |
| Business Rules |  |
| Special Requirements: |  |
| Assumptions: |  |
| Notes and Issues: |  |
|  | |

### Task Breakdown

#### Licence Items

|  |  |
| --- | --- |
| Task | Create License Items and update Wizard |
| Resource | RX Business Configuration Personnel (Daleen) |
| Description | Create the necessary Service Items to distinguish the different types of Message options:   * Gateway * 3rd Party * 3rd Party with Yap-Yap * Modem * None   The contract Wizard must allow for this selection of items. |
| Considerations | This needs to be carefully managed by business so that the current licensing does not fail at the clients, so a managed move to the new license items is required. Only once the new SMS Manager and Coms are installed will the new licensing work. |
| Timeline | 1 Day |

#### Creation of License codes from Licence Items

|  |  |
| --- | --- |
| Task | Create License Items and update Wizard |
| Resource | RX Business Configuration Personnel (Daleen) |
| Description | Create the necessary Service Items to distinguish the different types of Message options:   * Gateway * 3rd Party * 3rd Party with Yap-Yap * Modem * None   The contract Wizard must allow for this selection of items. |
| Considerations | This needs to be carefully managed by business so that the current licensing does not fail at the clients, so a managed move to the new license items is required. Only once the new SMS Manager and Coms are installed will the new licensing work. |
| Timeline | 1 Day |

### Cloud Message Database

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | 2 | | |
| Use Case Name: | Cloud Message database | | |
| Created By: | Denis Cloete | Last Updated By: |  |
| Date Created: | 18/06/2019 | Date Last Updated: |  |

|  |  |
| --- | --- |
| Actors: | Database |
| Description: | A database needs to be created in the Cloud. This database needs  to have the following:  Multiple Client Tenants  Configuration Tables for Tenants (Billing / Archiving / Authorizations)  SMS Messages that need to be sent to 3rd Party  Logs of Requests  Archive of Messages ( configuration of number of days to keep ) |
| Preconditions: |  |
| Postconditions: |  |
| Normal Course: |  |
| Alternative Courses: | None. |
| Exceptions: | None. |
| Includes: |  |
| Priority: | High |
| Frequency of Use: | High |
| Business Rules |  |
| Special Requirements: |  |
| Assumptions: |  |
| Notes and Issues: |  |
|  | |

### Configuration and Dashboard of 3rd Party API

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | 3 | | |
| Use Case Name: | Web site to manage and view dashboard of 3rd Party API | | |
| Created By: | Denis Cloete | Last Updated By: |  |
| Date Created: | 18/06/2019 | Date Last Updated: |  |

|  |  |
| --- | --- |
| Actors: | ORYX EMPLOYEE USER |
| Description: | Log into a website to manage a 3rd Party tenant. Require the following functionality:  Add a new tenant. This should pull up the licensed clients from Oryx Live.  Create a username and password for the Authentication.  Generate a secret key for the Authentication.  Add the 3rd Party contact details.  Enter the price per message and billing configuration ( Date to create invoice )  View a Dashboard of each clients messages waiting and processed View a report of the message counts and status’ |
| Preconditions: |  |
| Postconditions: |  |
| Normal Course: | 1. Oryx employee to log into the website using their AD credentials 2. Can manage or view the tenants |
| Alternative Courses: |  |
| Exceptions: |  |
| Includes: |  |
| Priority: |  |
| Frequency of Use: | Low |
| Business Rules | Only available to Oryx Employees. |
| Special Requirements: |  |
| Assumptions: |  |
| Notes and Issues: |  |
|  | |

### Automated Invoicing of Message Count into Listener

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | 4 | | |
| Use Case Name: | Automate the creation of an Invoice for messages sent. | | |
| Created By: | Denis Cloete | Last Updated By: |  |
| Date Created: | 18/06/2019 | Date Last Updated: |  |

|  |  |
| --- | --- |
| Actors: | ORYX Live |
| Description: | At Month End the system needs to send the messages sent from a specific date range. This needs to be sent to Oryx Live and it needs to generate an Invoice. Business to decide whether this invoice is in a trial state or can be created as active.  Reporting: A standard report needs to be created that shows the SMS sent via the 3rd Party. This needs to be available on Listener / Suite. |
| Preconditions: | Specific date is reached. |
| Postconditions: | An invoice is created in Oryx Live for the messages. |
| Normal Course: | 1. 3rd Party Month End Date occurs 2. System calculates the Messages and Price based on last bill date. 3. This Data is sent to Oryx Live and the Listener system generates an Invoice for Billing. |
| Alternative Courses: | Manually create the Invoice based on the counts from 3rd Party database. |
| Exceptions: | May need to exclude billing during integration testing with the Client. |
| Includes: |  |
| Priority: |  |
| Frequency of Use: | Low |
| Business Rules |  |
| Special Requirements: |  |
| Assumptions: |  |
| Notes and Issues: |  |
|  | |

### Messages sent to Cloud Database

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | 5 | | |
| Use Case Name: | Send SMS Messages from Listener to the Cloud | | |
| Created By: | Denis Cloete | Last Updated By: |  |
| Date Created: | 18/06/2019 | Date Last Updated: |  |

|  |  |
| --- | --- |
| Actors: | SMS MANAGER |
| Description: | As per current processes, Listener and RX Comms will create SMS messages and save them into the SMS table.  The SMS Messages need to be encrypted when saved into the SMS table. Only once a message has been processed by the SMS Manager will it be unencrypted.  If the 3rd Party Messaging is Licensed and Activated on SMS Manager for the client, it will take these messages and send them to a cloud-hosted database. The cloud-hosted database will hold the messages, which can then be accessed by the 3rd Party via a web service.  SMS Manager will be responsible for taking the Messages from Listener SMS table and sending them to the cloud server.  The Cloud server will contain messages from various clients, these need to be managed separately in the database.  Each client is a separate Tenant.  The new messages received from the client must be saved into a processing table. This table is used by the Web Service. |
| Preconditions: | Messages are created in the Listener SMS table |
| Postconditions: | Messages are available on the 3rd Party Messaging Web Service. |
| Normal Course: | 1. Messages are created into the SMS table, via Listener and RX Comms. 2. SMS Manager will check if 3’rd Party Messaging is Active. If this is true, the messages will be sent to a cloud-hosted database. 3. The SMS Manager will only send messages where the SMSDate has been reached and the status in (A, B). Future dated SMS are only sent when the date is reached. |
| Alternative Courses: | None |
| Exceptions: |  |
| Includes: | All Messages will be processed this way. |
| Priority: | High |
| Frequency of Use: | High |
| Business Rules | All messages that are status A or status B must be sent from the SMS table to the Cloud Database. Once a message has been successfully moved to the Cloud Server it’s 3rd Party status must be updated to “Processed” (indicating it is ready for 3rd party extraction), if there is a delay due to internet connectivity or other issue it should be set 3rd Party status to “Delayed”. |
| Special Requirements: | When calling the Web-Service to retrieve new messages the 3rd Party can stipulate the following:   1. How far back to retrieve messages (in minutes). 2. Prioritise Comms messages, above other messages. 3. Set the batch size of messages to retrieve.   When sending the batch of messages to the 3rd Party, the return results must include the following:  It must include the number of messages and the credits for this batch. |
| Assumptions: | The current SMS Run-Away process will still be active within RX Comms. |
| Notes and Issues: |  |
|  | |

### Web-Service for messages for 3rd party from Cloud Database

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| --- | --- | --- | --- |
| Use Case ID: | 6 | | |
| Use Case Name: | Web Service Message Request for 3rd Party | | |
| Created By: | Denis Cloete | Last Updated By: |  |
| Date Created: | 18/06/2019 | Date Last Updated: |  |

|  |  |
| --- | --- |
| Actors: | WEB-SERVICE |
| Description: | As per current processes, Listener and RX Comms will create SMS messages and save them into the SMS table.  If the 3rd Party Messaging is Enabled and Active for the client, it will take these messages and send them to a cloud-hosted database. The cloud-hosted database will hold the messages, which can then be accessed by the 3rd Party via a web service.  The Web-Services will contain, a request that allows the 3rd Party to retrieve messages. The request will return a batch of messages, and each message will have a unique Message Id. Each batch of messages will have a unique Message Batch Id.  Each Message Batch must be Acked by the 3rd Party, by calling the Ack Request with the Batch Id, the 3rd Party acknowledges successful receipt of the messages.  A new batch can only be sent once the current batch has been “acked”.  The messages batches need to be logged, with the number of messages, in order to keep billing history. The message status must be updated to “retrieved”, and the message flagged so that it can update the status in the Listener database.  The Message sent to the client will contain the following:\  See [Appendix A](#_Appendix_A_–) for Message Format |
| Preconditions: | Messages are created in the Listener SMS table |
| Postconditions: | Messages are on the cloud-database available on the 3rd Party Messaging Web Service. |
| Normal Course: | 1. Messages created into the SMS table, via Listener and RX Comms 2. SMS Manager will check if 3’rd Party Messaging is Active. If this is true, the messages will be sent to a cloud-hosted database. |
| Alternative Courses: |  |
| Exceptions: |  |
| Includes: | All Messages will be processed this way. |
| Priority: |  |
| Frequency of Use: | High |
| Business Rules | The Web Service must authenticate the 3rd Party, this will give the 3rd Party access for a specific amount of time, to access the messages. |
| Special Requirements: | When calling the Web-Service to retrieve new messages the 3rd Party can stipulate the following:   1. How far back to retrieve messages (in minutes). 2. Prioritise Comms messages, above other messages. 3. Set the batch size of messages to retrieve.   When sending the batch of messages to the 3rd Party, the return results must include the following:  It must include the number of messages and the credits for this batch. |
| Assumptions: | The current SMS Run-Away process will still be active within RX Comms. |
| Notes and Issues: |  |
|  | |

### 3rd Party Web-Service Token

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | 7 | | |
| Use Case Name: | Web-Service Authorization | | |
| Created By: | Denis Cloete | Last Updated By: |  |
| Date Created: | 18/06/2019 | Date Last Updated: |  |

|  |  |
| --- | --- |
| Actors: | WEB-SERVICE AUTHORIZATION |
| Description: | In order to Access the Integration Requests, the 3rd Party must get an authorization token. This token is then used in the request header when calling the web service requests.  To get the authorization token the 3rd Party must send a username and password. This will return an authorization token based on a secret key. The authorization payload must include the expiry time for the token, and the cost per message. Using the token means that they 3rd party accepts the cost per message.  The Authorization Token will contain the authorizations that 3rd Party to access the web-service requests.  The expiry time should be configurable per client. |
| Preconditions: | The Username, Password and Secret has been created for the client. |
| Postconditions: | The 3rd Party Client has an authorization token to access the messages. |
| Normal Course: | 1. The 3rd Party client will receive a username and password, as well as a secret key from Oryx Systems. 2. The 3rd Party will get an authorization token using the username and password. 3. The 3rd Party will use the authorization token when access the Messaging Web-Service requests. |
| Alternative Courses: | None. |
| Exceptions: | None. |
| Includes: |  |
| Priority: | High |
| Frequency of Use: | High |
| Business Rules | The authorization token will only be valid for a certain amount of time, on expiry a new the authorization token must be obtained. |
| Special Requirements: | When calling the Web-Service to retrieve new messages the 3rd Party can stipulate the following. |
| Assumptions: |  |
| Notes and Issues: |  |
|  | |

### Message Status Update

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | 8 | | |
| Use Case Name: | Message Status Update | | |
| Created By: | Denis Cloete | Last Updated By: |  |
| Date Created: | 18/06/2019 | Date Last Updated: |  |

|  |  |
| --- | --- |
| Actors: | WEB-SERVICE |
| Description: | The 3rd Party has the ability to update Listener with the Message Status. This allows certain business processes within Listener to work correctly.  The 3rd Party can send a request to update the status of a message. This request allows for multiple message status updates.  The message status ID updates can be the following:   1. Sent 2. Delivered 3. Failed   The MessageID is used to identify the message to update.  This must update the Message in the Cloud database, and the message flagged to be sent back to Listener.  Note: These status’s updates to not change the cost of the sent messages to the 3rd Party. It is up to the Client to fix their data in Listener. |
| Preconditions: | The messages are retrieved by the 3rd Party. |
| Postconditions: | The 3rd party updates the status of the messages, via a web-service call. |
| Normal Course: | 1. The 3’rd Party retrieves messages from the Web-Service. 2. The 3rd Party sends the messages via their systems. 3. The 3rd Party then update the status of the messages via Web Service call. 4. The Messages in the cloud database are updated, these are then flagged to be updated back to Listener database. |
| Alternative Courses: | None. |
| Exceptions: | None. |
| Includes: |  |
| Priority: | High |
| Frequency of Use: | High |
| Business Rules | The MessageId of the message together with the message status must be sent. |
| Special Requirements: | The 3rd Party must be able to send multiple message status’ updates with one call. |
| Assumptions: |  |
| Notes and Issues: |  |
|  | |

### Listener Message Update

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | 9 | | |
| Use Case Name: | Listener Message Update | | |
| Created By: | Denis Cloete | Last Updated By: |  |
| Date Created: | 18/06/2019 | Date Last Updated: |  |

|  |  |
| --- | --- |
| Actors: | SMS MANAGER |
| Description: | All messages that have had a status update must be retrieved and those message status’s updated in Listener SMS table. This will drive certain business rules within the Listener System. The SMS status in the Listener system will be updated, according to the 3rd Party status update.  Status Update may will result in certain business processes occurring where the signal will come onto the monitoring stack, in the event of a Failed Message Status. |
| Preconditions: | The message status in the Cloud Server has been updated. |
| Postconditions: | The 3rd party updates the status of the messages, via a web-service call. |
| Normal Course: | 1. The 3’rd Party retrieves messages from the Web-Service. 2. The 3rd Party sends the messages via their systems. 3. The 3rd Party then update the status of the messages via Web Service call. |
| Alternative Courses: | None. |
| Exceptions: | None. |
| Includes: |  |
| Priority: | High |
| Frequency of Use: | High |
| Business Rules | The MessageId of the message together with the message status must be sent. |
| Special Requirements: | The 3rd Party must be able to send multiple message status’ updates with one call. |
| Assumptions: |  |
| Notes and Issues: |  |
|  | |

### 3rd Party request to clear all waiting messages older that X

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID: | 10 | | |
| Use Case Name: | Listener Message Update | | |
| Created By: | Denis Cloete | Last Updated By: |  |
| Date Created: | 18/06/2019 | Date Last Updated: |  |

|  |  |
| --- | --- |
| Actors: | WEB-SERVICE |
| Description: | There should be a webservice call for the 3rd Party to check how many messages are older than X. Then by using the same web service call they can clear these message from the que, by including a clear option. |
| Preconditions: | The message status in the Cloud Server has been updated. |
| Postconditions: | The 3rd party updates the status of the messages, via a web-service call. |
| Normal Course: | 1. 3rd Party request to check how many messages older than 1 hour. 2. 3rd Party request to clear all messages older than 1 hour 3. The system request to flag these as “NOT SENT” and move them out the Message processing table to the Archive table. |
| Alternative Courses: | None. |
| Exceptions: | None. |
| Includes: |  |
| Priority: | High |
| Frequency of Use: | High |
| Business Rules |  |
| Special Requirements: |  |
| Assumptions: |  |
| Notes and Issues: |  |
|  | |

# SIGN OFF

|  |  |  |
| --- | --- | --- |
| Stake Holder | Signature | Date |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

# APPENDIXES

## Appendix A – Message DATA

|  |  |
| --- | --- |
| Field | Description |
| MessageId | Unique Id of the message |
| MobileNo | The recipient of the message |
| MessageDate | Date of the message |
| Source | Comms |
| Client Code | CustCode of the client. (Blank if not linked to a client) |
| OfficeHours | Y/N |
| Message | Contents of the message |
| AlarmType | If from Comms the alarm type of the signal |
| MessGroup | If from Comms the Message group |
| OBNumber | If from Comms the OB for the signal |
| Email Address | The email address of the Message Contact. |

## Appendix B – Diagram of project solution

