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SIMcontrol

Service Description

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1. Executive Summary

Flickswitch (Pty) Ltd is a subsidiary of the *Smart Phone (Pty) Ltd* group in South Africa. The *Smart Phone* group has a proven track record of over 10 years in the South African cellular market and has valued business partnerships with all three incumbent mobile network operators (MNOs). *Flickswitch* is introducing innovative products and services to a market demanding value for money and ease of use. Said products and services include automated prepaid management systems and dynamic recharge services.

Flickswitch plans to maintain (and grow) its customer base by

- building intuitive, user-friendly web and mobile interfaces
- by automating services that currently require manual intervention
- and by using new technology and Flickswitch's unmatched customer service to streamline the mundane, labour-intensive repetitive actions associated with the Mobile Network Operators current offerings.

There are a wide range of devices using the GSM network for transmission of business critical voice and data. These include POS (point-of-sale) devices, vending terminals and tracking devices with built-in GPS receivers. A customer entering into a post-paid airtime contract with a MNO and using the SIM card in one of the GSM-enabled devices is not ideal, as the cost of the contract versus usage of the contract is normally excessive, the inherent administrative burden associated with a post-paid airtime contract can be prohibitively time-consuming, and (most importantly) the customer, as owner of the SIM card, is exposed to fraud and is liable for all costs should the SIM card be used anywhere else but the GSM device.

The *SIMcontrol* service described in this document addresses these problems through a managed prepaid alternative.

The *SIMcontrol* service automatically monitors a predefined list of prepaid SIM cards on a continuous 24-hour basis; recharging the airtime account should the prepaid SIM card's airtime account balance drop below a threshold limit specified by the client. Data and/or SMS bundles can also be loaded via the service in place of airtime. The value of the recharge is automatically deducted from the client's prefunded account associated with the *SIMcontrol* service.

Detailed reporting and notification of events is provided by the *SIMcontrol* service and can be tailored to the requirements and specifications of the customer.

Currently, the *SIMcontrol* service is only available on the Vodacom network in South Africa.

2. General Company Description

Flickswitch (Pty) Ltd is a subsidiary of the *Smart Phone (Pty) Ltd* group in South Africa and was established in 2007. Other companies in the *Smart Phone* group include the well known companies *Smartcall* & *Smartcom*.

Flickswitch would like to offer innovative and exciting services to the cellular prepaid and contract markets around the world by

- Offering new products and services that are not currently available to the general consumer.
- Creating a loyal customer base by offering their customers exceptional service and value for money.
- Applying the knowledge and experience garnered in the South African market to deploy technology in other new & developing markets with comparable systemic challenges.

The *SIMcontrol* service is one such solution that *Flickswitch* has developed and introduced to the South African market.

3. Overview of the *SIMcontrol* service

The following is a description of an actual company's business and how their requirements were able to be effectively met by using the *SIMcontrol* service.

*ACME Company** is a South African company that has developed and markets an intelligent pay-as-you-go vehicle management system that uses GPS and the GSM cellular network to deliver various types of information to a central tracking server as well as to their customer's cellular phones. This transmission of data via the GSM network is achieved with SIM cards being used in the installed vehicle management systems.

The company used contract SIM cards in their terminals but realised that this was a time-consuming, cost-ineffective administration nightmare. The total cost incurred through cellular data transmission and airtime use by the vehicle management system was much less than the cheapest contract available. Another negative of this contract-based solution is the 24 month network-operator lock-in period. Investigation found that it would be more cost effective to make use of prepaid SIMs; as costs incurred and usage can be monitored and controlled more efficiently and the risk of fraud would be negligible.

The company approached *Flickswitch* and were introduced to the *SIMcontrol* service that suited their requirements perfectly. *Flickswitch* provided a solution whereby the prepaid SIMs present in the vehicle management systems that are deployed can be effectively monitored and reported upon as well as have their airtime accounts automatically recharged based on predefined thresholds and rules. All of this is done with minimal manual intervention required from the customer.

Fleet owners using vehicle management systems of this ilk encounter various difficulties; the main issue being the lack of a central management interface, making SIM usage tracking and SIM balance tracking difficult or impossible. Inability to monitor the SIM cards installed in the tracking units leads to inactive units.

The *SIMcontrol* service was able to provide this much-needed centralised interface and automatically monitor their SIM cards with their business rules, recharging when needed and keeping the company up to date with its reporting.

**Name changed*

The *SIMcontrol* service can be implemented in any environment where critical monitoring of SIM card account balances and tight control of expenditure via the prepaid airtime infrastructure is required.

By using the *SIMcontrol* service, not only is the risk of fraud and misuse of the MSISDNs drastically minimised, the business rule and alerting framework of the service can make owners of the MSISDNs aware of any fraud and abuse occurring early on. The administrative overhead of maintaining the contracts with the network operators is removed from the responsibilities of the customer and the comprehensive reporting and invoicing from the service allows for easy reconciliation at month end.

The *SIMcontrol* service can be used to monitor and control corporate cellular schemes as well as for any device such as CRM (customer relationship management) devices, vending terminals and POS (point of sale) devices deployed in the field and making use of the GSM network in South Africa.

4. The *SIMcontrol* service

The *SIMcontrol* service consists of:

- a prepaid SIM identification and maintenance interface, where the client is able to keep track (and control) of their SIM cards being monitored
- a set of threshold limits for automatic airtime recharges or loading of data/SMS bundles with related business and fraud detection rules
- the monitoring engine which is responsible for the monitoring of the SIM cards' balances
- the recharge infrastructure that sends the recharges to the Mobile Network Operator
- the reporting subsystem, reporting on all account and recharge activity.

The service is fully automated and runs 24 hours a day, 7 days a week. There is no manual interaction needed for the system to operate unless the system specifically requests so.

4.1. Maintaining

The *SIMcontrol* client (the client being *ACME* Company in our example) will have an account on the *SIMcontrol* system that is linked to a list of SIM cards that are monitored. Recharges occur the moment they are required; i.e. when the minimum limit for a particular balance is reached subject to the client maintaining a positive account balance. The client's account is then automatically debited according to these recharges.

Phase 1 of the system will allow the client to maintain the list of prepaid SIM cards that need to be monitored via e-mail.

Using e-mail, the client will be able to maintain the list of prepaid SIM cards by e-mailing a file (based on a template provided by *Flickswitch*) that contains the MSISDNs of the prepaid SIM cards to a *SIMcontrol* maintenance e-mail address. Once the e-mail is received by *Flickswitch*, the system is updated with the new list of SIM cards to monitor.

Phase 2 of the system will allow the client to maintain the list of prepaid SIMS that need to be monitored via a web interface. There will also be various functions available to allow the client to check account balances in real-time as well as generate various types of reports.

To fund and/or replenish an account, the client will be required to deposit money into *Flickswitch's* bank account using a specified reference number as the payment reference. When this payment is received by *Flickswitch*, the service will credit the client's account.

4.2. Monitoring

The *SIMcontrol* service actively monitors the airtime and / or data / SMS bundle balances of the client's SIM cards. The balance monitoring is done through a direct interface into the Vodacom network; is fully automated and operates 24/7.

A SIM card will be recharged if its balance drops below the minimum limit (limits are defined by the client). Data and SMS bundles need to be used up or expire before a new bundle can be loaded.

This direct link to the Vodacom infrastructure gives the *SIMcontrol* service the ability to monitor the SIM cards without them being loaded with special software or removal from the units they are installed in.

4.3. Recharging

If an SIM card's airtime balance is below the minimum threshold limit defined by the client, the *SIMcontrol* service will recharge the airtime of the SIM card with an amount set by the client. The *SIMcontrol* service will load a new data bundle or SMS bundle as specified by the client when the data bundle or SMS bundle has expired or is used up.

This is achieved by;

- Checking that the client's account has enough funds to cover the airtime recharge and / or data / SMS bundle
- If there are funds available, the recharge amount and appropriate transaction fee is deducted from the client's account and the SIM card is recharged

If there are not enough funds to cover the recharge, the system will alert the client via e-mail.

The client also has the ability to apply certain business rules for the recharging of the prepaid SIM cards. An example of a business rule would be *"Do not recharge 0821234567 if the total recharges for the current calendar month exceeds R100.00 and alert me when this happens"*

4.4. Reporting

A monthly report will be sent to the client via e-mail. This report will contain the following:

- SIM cards and their associated MSISDNs added for the previous month.
- SIM cards removed for the previous month.
- The client's account balance.
- All airtime recharges for the previous month.
- All data / SMS bundles recharged for the previous month.

Notifications and/or alerts will be sent to the client via e-mail when their account balance on the system reaches a minimum threshold limit so that more funds can be deposited into the account as well as when a specific recharge on a monitored SIM card fails due to insufficient funds.

Daily reports are sent that contain information on all recharges for the previous day that occurred for SIM cards belonging to the client.

Full invoicing and statements are also sent to the client via e-mail at the end of each month.

The client will also be able to generate various types of reports for an additional fee (e.g. recharge activity on a specified SIM card for a specified time period) when phase 2 of the system is launched.

5. Costs

There is currently one costing option available to the client wanting to make use of the *SIMcontrol* service. This cost is regardless of whether or not the client supplies their own SIM cards or *Flickswitch* supplies the SIM cards.

Option 1

- A monthly management fee of R7.00 (seven Rand) per SIM card specified by the client. This fee will be deducted from the client's account on the first day of every month for the previous month.
- The client is required to prefund their account with a minimum balance of R1000 (one thousand) required.
- No discount is available on the airtime recharges or data / SMS bundles.
- A setup fee of R10.00 (ten Rand) per SIM card added to the *SIMcontrol* service is applicable.
- A transaction fee of 10% (ten) of the recharge amount is applicable to low-denomination recharges (low-denomination recharges being between R2.00 (two Rand) and R11.00 (eleven Rand)).

6. Contact Details

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