|  |
| --- |
| Laboremus Uganda Ltd  Plot 1 Lourdel Road  Nakasero, Kampala  Uganda  www.laboremus.no  timothy@laboremus.no  T: +256 751 069 277  TIN: 1002279805  Date: 29.03.2017  Software Reqiurements Specification  Real-time financial service location planning and search System  Humanitarian OpenStreetMap Team US Inc.  Version 1 |
| Beskrivelse: Beskrivelse: Beskrivelse: Beskrivelse: Beskrivelse: star This document is confidential, and should not be shared with anyone outside Humanitarian OpenStreetMap Team US Inc. and Laboremus Uganda Ltd. |

Table of Contents

[1 Web Application 3](#_Toc478137729)

[2 Mobile Application 5](#_Toc478137730)

[2.1 Android 5](#_Toc478137731)

[2.2 USSD / SMS 6](#_Toc478137732)

[3 Future phase 7](#_Toc478137733)

# Web Application

This part of the system will b e a web application accessed through google chrome and based on OpenStreetMap Analytics (OSMA), making as much use as possible of the existing codebase. The OSMA codebase consists of two major parts: the frontend and the data-crunching backend. The web frontend will also offer analytical functions to integrate the various data sources and make available analysis options over the combination of these data sources.

1. As a financial service provider, if I load the URL of the financial service provider website, the website loads a map of Uganda that visualises all the financial service providers in the country on the OSM baseline data layer.
2. As a financial service provider, I can see filters in the top right corner and these filters are labled type and contextual layer. Under filter type we have the following options;
   1. Mobile Money Agents
      1. Mtn Mobile Money
      2. Airtel Mobile Money
      3. Uganda Telecom
      4. Africell Uganda
   2. Banks (*HOT to comfirm this list with the latest from BoU. I have removed Crane Bank from the list below*)
      1. ABC Capital Bank Limited
      2. Bank of Africa- Uganda Limited
      3. Barclays Bank of Uganda Limited
      4. Bank of Baroda (Uganda) Limited
      5. Bank of India (Uganda) Limited
      6. Cairo International Bank Limited
      7. Centenary Rural Development Bank Limited
      8. Citibank Uganda Limited
      9. Commercial Bank of Africa (U) limited
      10. DFCU Bank Limited
      11. Diamond Trust Bank Uganda Limited
      12. Ecobank Uganda Limited
      13. Equity Bank Uganda Limited
      14. Guaranty Trust Bank (U) Limited
      15. Finance Trust Bank Limited
      16. Housing Finance Bank Limited
      17. Imperial Bank (Uganda) Limited
      18. KCB Bank Uganda Limited
      19. NC Bank Uganda Limited
      20. Orient Bank Limited
      21. Stanbic Bank Uganda Limited
      22. Standard Chartered Bank Uganda Limited
      23. Tropical Bank Limited
      24. United Bank for Africa (Uganda) Limited
   3. ATMs
   4. Credit Institution
      1. Mercantile Credit Bank Ltd
      2. PostBank Uganda Ltd
      3. Opportunity Bank Uganda Ltd
      4. Top Finance Bank Uganda Ltd
   5. MDI
      1. Pride Microfinance
   6. MFI
   7. SACCO
   8. Bureau de Change
   9. Money Transfer Services
   10. Post Office

Under the filter contextual layer, we shall have the following options;

1. Economic activity
2. Population Density
3. Mobile phone/cell coverage
4. Natural/man made hazards
5. As a finacial service provider, I can view the presence of any financial institution all over the country by choosing the financial institution of interest under the filter labelled type in the top right corner of the map. The map will then reload and show the presence of the financial institution all over the country. The financial service providers can be visualised on the map using dots, colors, triangle, and e.t.c. This visualisation shall be concluded by Bernard.
6. As a financial service provider, I can view the presence of any financial institution in relation to the data from a given contextual layer by selecting the financial instituition of interest under the type filter and selecting the contextual layer of interest under the contextual layer filter. The map then reloads to show the respective data.
7. As a financial service provider, I can view Financial Service provider’s locations’ within a given radius by clicking the analysis menu icon on the left hand side of the website. The website expands the analysis menu view and then places a location icon on my mouse pointer which I can use to place in the location of interest by clicking on the map. The website then draws a circle of the given radius around the location of interest and displays the financial service providers within that radius on the already expanded analysis menu. On the same view I can also see the distance to those financial service providers from the location where I set the pin.
8. As a financial service provider, I can view the distance from a certain location/building as identified by the user to tertiary road or better (and sealed surface, if that information is available). Bernard’s in put will be needed for this to be properly visualised
9. As a financial service provider, I can view the type and amount of (competing) businesses within a distance radius of a certain location by choosing the competing business first in the type drop down filter found in the top bar of the website. I can let’s say choose ATMS and mobile Money agents. I then click the analysis menu icon on the left hand side of the website. The website expands the analysis menu view and then places a location icon on my mouse pointer which I can use to place in the location of interest by clicking on the map. The website then draws a circle of the given radius around the location of interest and displays the financial service providers of interest within that radius on the already expanded analysis menu.
10. As a financial service provider, I can view an estimate of the potential market based on population data for a business of a certain type. Bernard’s in put will be needed for this to be properly visualised
11. As a financial service provider, I can view the amount/percentage of businesses in a certain sector/of a specific type with access to a (specific type of) FSP, where “access to” can be set as a certain travel distance. Bernard’s in put will be needed for this to be properly visualised

# Mobile Application

This part of the system will consume data from the OSM API and enable consumers compare the suitability of the services offered to them by various FSPs, based on their specific conditions. Services considered are opening of accounts, acquiring loans, performing deposits, money exchange/transfer and withdrawal.

## Android

This part of the mobile app will cater for users’ with smart phones. The assumption made here is that the financial sercives consumer already has the app on his/her phone. If the financial services consumer does not have the app on their phone, they can go to Google play store and download the app.

1. As a financial services consumer, I am able to tap a short cut of the app on my phone and then it will render a view with the services offered by the mobile app. These services are represented by a square tile with an icon. The services are; **save money, acquire a loan, transfer money and withdraw money**.
2. As a financial service consumer, I can request for information about saving money by clicking the Save Money service tile. The android app then loads a view with a list of financial institutions with which I can save money. This list is ordered by proximity to the consumer.
3. On the same list above, as a financial services consumer, I can change my location by clicking the map icon in the right top corner. The mobile app then loads a view with a list of locations that I can choose from by typing the city of choice.
4. On the same financial services view I can search for a financial service provider by tapping the search icon in the top right corner. The android app then renders a search text field where I can type the name of the financial service provider I am looking for.
5. As a financial sevice consumer, I can view the details of the financial service provider by tapping the FSP I am interested in and the mobile app will render a view with the location of the FSP on the map. I can also see the address, opening hours, telephone contact, post office box and additional information about the financial service provider.
6. As a financial service consumer, I can view how far I am from the financial service provider by taping the location icon on the map. The android app then loads a view with a map showing my location and the location of the service provider as well as the distance in between.
7. As a financial service consumer, on the view with the details of the financial service provider, I can rate the accuracy of the information provided by tapping the star icon just below the map. The android app then renders a view where I can tap how many stars represent the accuracy of the information. On this view, I can also add free text about the review and click send review to save the information.
8. As a financial service consumer, I can request for information about acquiring loans by clicking the “acquire a loan” square tile. The app then loads the same screens as above for searching, setting location and view information about a FSP:
9. As a financial services consumer, I can request for information about transferring money by tapping the “transfer money” tile. The app then loads the same screens as above for searching, setting location and view information about a FSP:
10. As a financial services consumer, I can request for information about withdrawing money by tapping the “withdraw money” tile. The app then loads the same screens as above for searching, setting location and view information about a FSP:

## USSD / SMS

This part of the mobile app will cater for users with dumb phones.

1. As a financial services consumer, I am able to dial \*124# (this code is being used as a placeholder, it will be replaced with the actual code when it is procured) on my phone and then it will render a flash view with the services offered by the mobile app. On this view, I can also see a text field, which I can use for replying, two buttons below the text field, cancel and send. These services are listed with option numbers such that the user can reply with an option number and tap the send button;
   1. **save money**
   2. **acquire a loan**
   3. **transfer money**
   4. **withdraw money**.
2. As a financial service consumer, I can request for information about saving money by replying in the input field with the option 1 and taping the send button below the input field. The mobile app then sends an sms to my phone with all the information required to save money. This information is the financial service provider name, location (address of the financial service provider) and contact information.
3. As a financial service consumer, I can request for information about acquiring a loan by replying in the input field with the option 2 and taping the send button below the input field. The mobile app then sends an sms to my phone with all the information required for me to acquire a loan. This information is the financial service provider name, location (address of the financial service provider) and contact information.
4. As a financial service consumer, I can request for information about transfering money by replying in the input field with the option 4 and taping the send button below the input field. The mobile app then sends an sms to my phone with all the information required for me to transfer money. This information is the financial service provider name, location (address of the financial service provider) and contact information.
5. As a financial service consumer, I can request for information about withdrawing money by replying in the input field with the option 5 and taping the send button below the input field. The mobile app then sends an sms to my phone with all the information required for me to deposit money. This information is the financial service provider name, location (address of the financial service provider) and contact information.

# Future phase

This part of the document will highlight the parts of the system that can be made better in the future.

1. As a financial service provider, I would like an interface within the web app where I can add more information that I would like to be known to the financial service consumers. Information like interest rates about the different types of loans the the FSP provides.
2. As a financial service provider, I would like an interface within the web app where I can update financial service provider information like address, telephone and email.
3. As a finaincial service consumer I would like to be able to navigate to the fianacial service provider location by clicking the location icon on the map and the mobile app then initiates a mapping technology to navigate me to the location.

Signed by:

Duly autorised representative of

**Laboremus Uganda Ltd**

Lucrezia Biteete

Managing Director

Duly authorised representative of

**Humanitarian OpenStreetMap Team US Inc.**

Paul Uithol

Director, Community Programs