Handover Document

# Ownership Handover

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| **Project** | **Stack** | **New Owner** |
| USSD | PHP, MySQL, Apache, Caddy |  |
| USSD Report | MySQL |  |
| Merchant Payment Gateway (UI/Frontend) | HTML, CSS, JavaScript |  |
| Merchant Payment Gateway (Backend) | Java, Spring Boot |  |
| Push Notification | cURL, SHELL |  |
| SMPP | Java, Spring Boot, Kafka, MySQL |  |
| Web Site (trustaxiatapay.com) | HTML, CSS, JavaScript, PHP |  |

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| --- | --- | --- | --- | --- | --- |
| **Server** | **IP** | **Port** | **User** | **Password** | **Location/ Database** |
| Production Web Server | 10.0.1.150 | 22 | root | Shared Individually | /var/www/html |
| Production Database | 10.0.1.150 | 3306 | root | Shared Individually | ussdwork |
| Staging Web Server | 10.0.2.14 | 22 | root | Shared Individually |  |
| Staging Database | 10.0.2.14 | 3306 | root | Shared Individually |  |

**USSD: Production Connectivity with Telcos via Caddy**

|  |  |
| --- | --- |
| **Port** | **Telco** |
| 8081 | Grameenphone |
| 8082 | Banglalink |
| 8083 | Robi/Airtel |
|  |  |
|  |  |
|  |  |

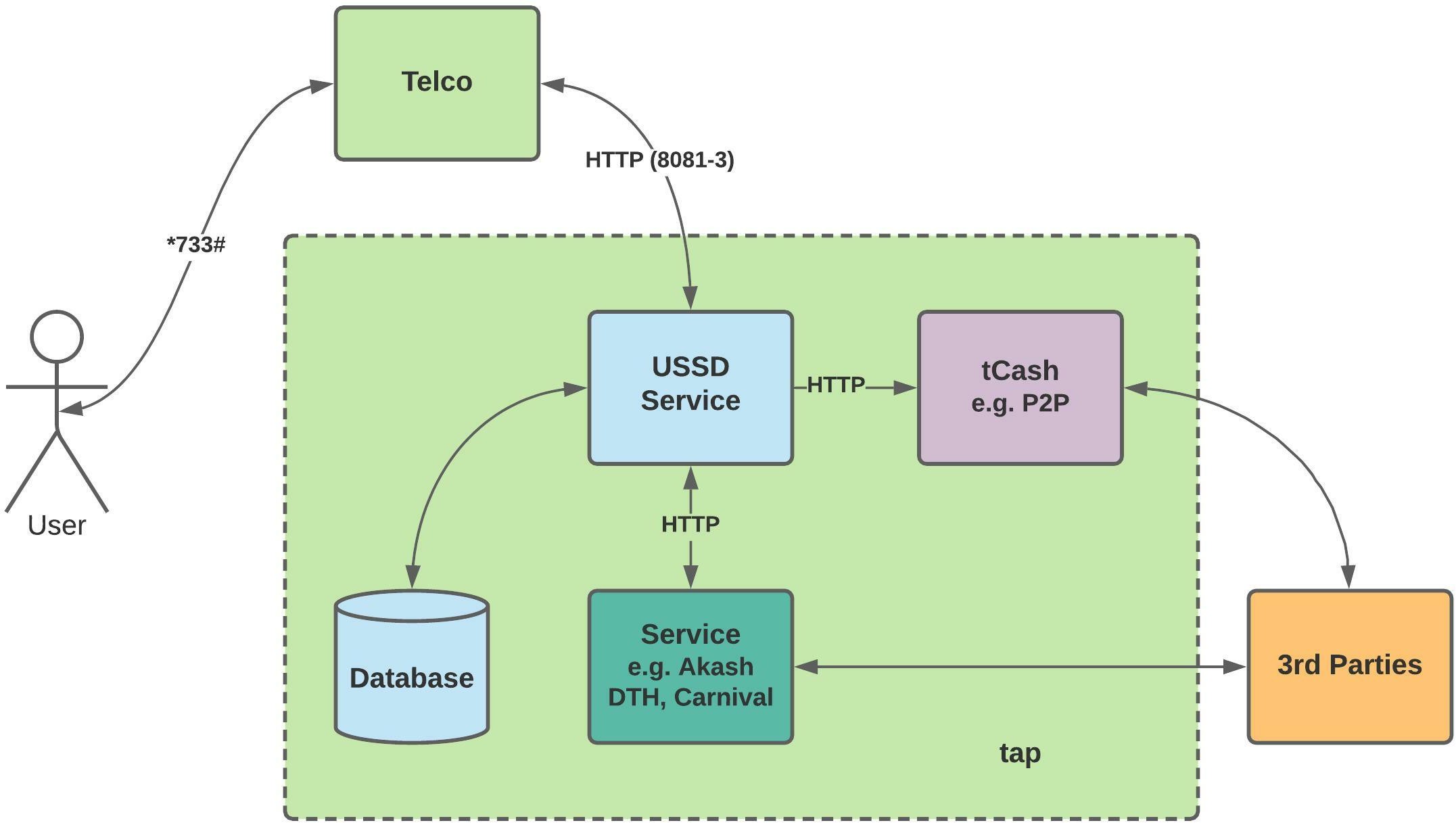


Figure: High-level Diagram

## includes/

This directory contains all the code library. Code are broken down across many file with appropriate filename.

## includes/bootstrap.php

This file declares many common functions prior to Composer’s autoload inclusion. This file also includes other files such as helpers, sessions etc.

## includes/helpers.php

This file contains all the business logic.

## includes/report-helpers.php

This file contains all the log required to generate USSD report.

## includes/schools.php

This file contains all the available school list.

## includes/session.php

This file handles the user session (via mdnstate) including the identification of user type.

## include/ussdmenu.php

This file contains logic to populate and manipulate USSD menu.

## public/bl/service.php, public/gp/service.php, public/robi/service.php

Entry point of the application. This file ensures the compatibility with the telcos.

## vendor/

Excluded from code repository. Contains Composer packages.

## .env

All the environment variables are declared in this file.

* Repository: https://bitbucket.org/bdkepler/ussd/
* Branch: master

Code resides in **master** branch reflect **production** code

# USSD: Running the Application Locally

## Prerequisites

* Apache
* PHP 7.4
* Composer
* MySQL

## Setup

* After cloning the repository, run the following command from the project root to install composer dependencies.

$ composer install

* Duplicate the **.env.example** file and rename it to **.env** and update the content of the file as needed.
* Copy the database schema from the staging database. Populate the **appmenu** table.

We are using Banglalink as an example here.

## Initial Call (New Session)

[http://localhost/bl/service.php?](http://localhost/bl/service.php) operation=6001&mobileNo=8801923134384&transId=4CFD612B751D30961FEC&NEW\_REQUE ST=1

**Subsequent Call (Continuation of Previous Session)**

[http://localhost/bl/service.php?](http://localhost/bl/service.php) operation=6008&userData=4&transId=4CFD612B751D30961FEC&mobileNo=880192313438 4&NEW\_REQUEST=0

Banglalink sends the user data over **userData** param.

See the Postman collection (provided separately) for all service URLs.

# USSD: Code Deployment

* Update or add the environment variable (if needed)

$ sudo nano /var/www/html/tapussdlive/.env

* Upload the changed file(s) to the web server using a FTP client or scp
* Copy and replace the production/staging file(s)

$ sudo cp .env.example /var/www/html/tapussdlive/.env.example

$ sudo cp bootstrap.php /var/www/html/tapussdlive/includes/bootstrap.php

$ sudo cp helpers.php /var/www/html/includes tapussdlive/helpers.php

$ sudo cp schools.php /var/www/htm/tapussdlive/includes/schools.php

$ sudo cp ussdmenu.php /var/www/html/tapussdlive/includes/ussdmenu.php

Identify user type and update top-level menu. Change the ID accordingly.

UPDATE

`appmenu` SET

`TEXT` = 'Utility|1. NID|2. BNRF|3. DESCO|4. Passport Fees|5. DPDC|6. WZPDC Postpaid|7. Insurance|8. NESCO|9. Dhaka WASA|10. Khulna WASA|11. Bakhrabad Gas|12. AKASH DTH|13. CARNIVAL'

WHERE

`ID` = '117';

For instance, we would run the following query if we are to add an item to the agent’s utility menu.

UPDATE

`appmenu` SET

`TEXT` = 'Utility|1. NID|2. BNRF|3. DESCO|4. Passport Fees|5. DPDC|6. WZPDC Postpaid|7. Insurance|8. NESCO|9. Dhaka WASA|10. Khulna WASA|11. Bakhrabad Gas|12. AKASH DTH|13. CARNIVAL'

WHERE

`ID` = '31';

To add service level menu items, run the following query.

INSERT INTO `appmenu` (

`NID`, `SERVICE`, `ISDYNAMIC`, `PROCESS`,

`TEXT`, `PERVNODE`, `NEXTNODE`, `TYPE`,

`CHECKING`, `USERPROCESS`, `INPUTNAME`

) VALUES

(

'1413', 'TBL-USER', 'N', 'NA', 'Carnival User ID:',

'14', '1413S', 'INPUT', 'NA', 'NA',

'userNumber'

), (

'1413S', 'TBL-USER', 'N', 'NA', 'Amount:',

'1413', '1413SS', 'INPUT', 'NA', 'NA',

'amount'

), (

'1413SS', 'TBL-USER', 'N', 'NA', 'PIN:',

'1413S', '1413SSS', 'INPUT', 'NA', 'NA', 'pin'

), (

'1413SSS', 'TBL-USER', 'N', 'NA', 'Notifying Mobile Number:',

'1413SS', '1413SSSS', 'INPUT', 'NA',

'NA', 'notificationNumber'

), (

'1413SSSS', 'TBL-USER', 'Y', 'NA',

'THANKS', '1413SSS', '1', 'POST', 'NA', 'CARNIVAL', 'NA'

);

* Breaking Down **NID**
  + 1413 - 1 = Home Menu, 4 = 4th item of the Home Menu, 13 = 13th item of the previous menu
* Set proper **service** value. Above example shows the menu user. Possible values are
* The value of text is displayed to the user
* **PREVNODE** refers to the previous item of the menu
* **NEXTNODE** indicates the next item of the menu
* As the menu dives down, **S** is added to the NID. 1413S represents, it’s the child of 1413 and so on.
* **TYPE** is used to declare the type of item. Possible values are.
* The value of **USERPROCESS** is used by the **ussdmenu.php** file to identify the service.

Each month we need to submit a USSD usage report to the product and finance team.

Extract a month’s data (e.g. November 2021) from the production table and then import it on a local database.

The following examples uses **\_sessions\_bl** table. Change the table name as needed.

## Total Session

select count(session\_id) from `\_sessions\_bl`;

**Total Recharge Attempt**

select count(session\_id) from `\_sessions\_bl` where is\_recharge\_attempt = 1;

## Unregistered Hits

select count(session\_id) from `\_sessions\_bl` where user\_type = -1;

**Total Successful Session for Invoice**

Total Successful Session for Invoice = Total Session - (Total Recharge Attempt + Unregistered Hits)

## RG Sessions

delete from `\_sessions\_bl` where is\_rg\_candidate != 1;

—- run the delete query; provided separately

—- find the RG sessions by running the following query select count(\*) from `\_sessions\_bl`;

**NRG Sessions**

NRG Sessions = Total Successful Session for Invoice - RG Sessions

Add the database ID from the **appmenu** table to these method declared on the **includes/ report-helpers.php** file.

* getAgentRgCandidateIds()
* getUserRgCandidateIds()

# USSD: Further Improvements

* Develop a SHELL script or a service that would clean the **mdnstate** on set interval
* Archive session tables used for USSD Report
* Move the order in which the user enters PIN
* Scramble/encrypt PIN in log
* Have log retention policy. Currently Apache access log is set to keep 100 years of logs.

# USSD: Debugging

Service unavailability on the user’s end is the most common USSD issue

* Identify if the service is unavailable for one or all telco by dialing **\*733#**
* Check the Apache log (**/var/log/apache2/access.log**). Use **grep** or **ngrep** if necessary.
* Hit the service URL (**service.php**) from browser to see if it’s working from our end
* Check if Caddy is up and running (**sudo systemctl status caddy**)
* See if our response is taking too long. If so, back up and empty the **mdnstate** table.
* If the issue still persist, consult network support team

URLs: (production)

GP: 10.0.1.150:8081/gp/service.php?userid=trust&password=trust123&msisdn=01798416450&SessionID=sfsdfsf&ShortCode=733&response=0

BL: (production)

http://10.0.1.150:8082/bl/service.php?userid=trust&password=trust123&userData=0&mobileNo=01936861148&transId=78787&short\_code=733&NEW\_REQUEST=0

Robi Airtel: (production)

<http://10.0.1.150:8083/robi/service.php?userid=trust&password=trust123&input=0&msisdn=01874838591&SessionId=sfsdfsf&ShortCode=733&response=787>

Teli talk:

For testing using postman :

<http://10.0.1.150/tt/servicetest.php?msisdn=01817184370&input=1>

Method: post

Production: http://10.0.1.150/tt/service.php

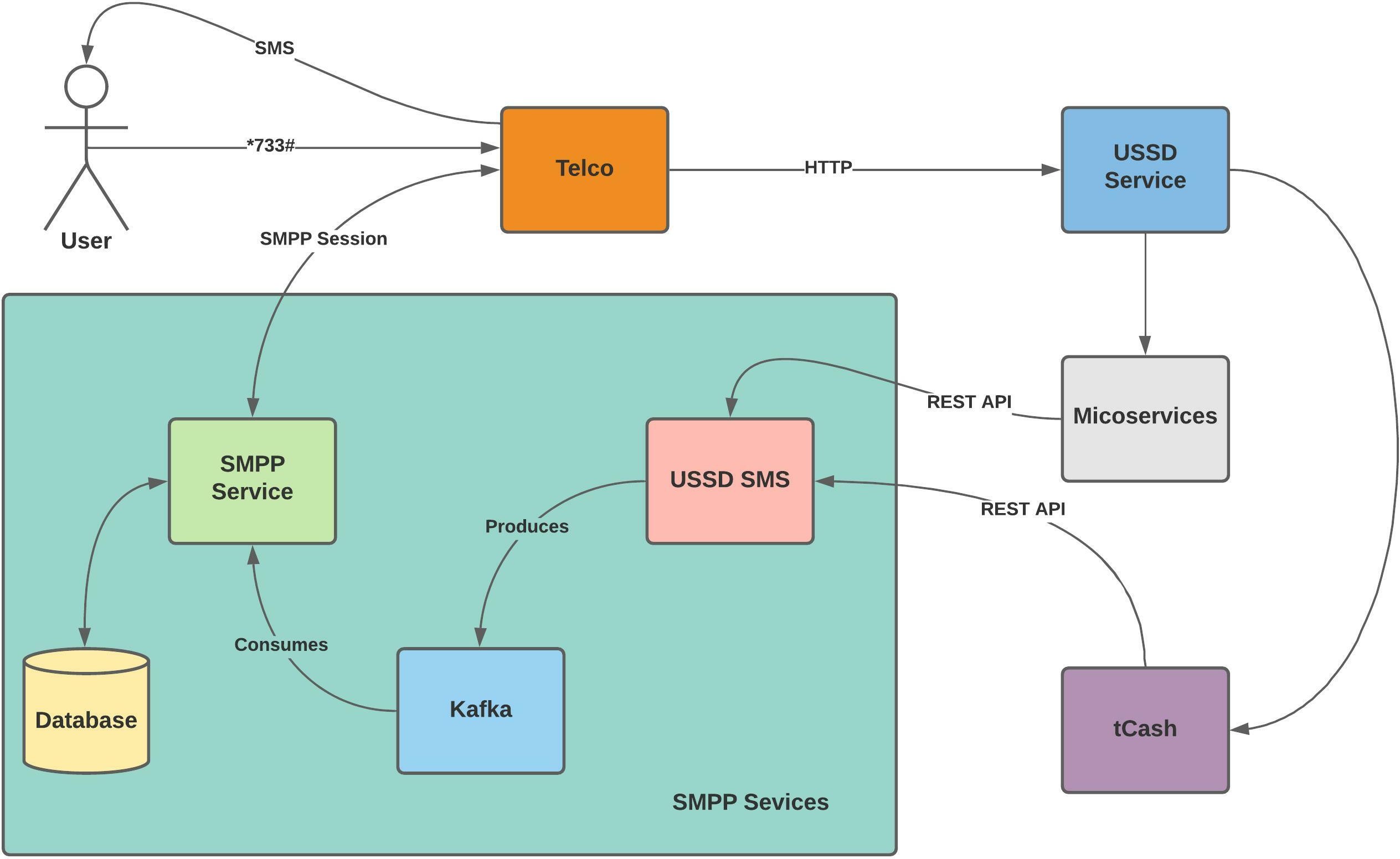


Figure: High-level Diagram