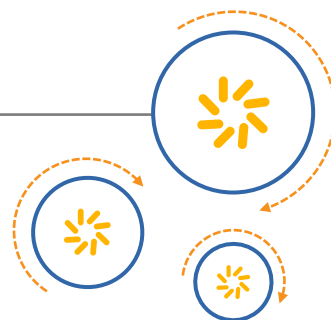**QUALCOMM**®

Qualcomm Technologies, Inc.

Device Pairing Subsystem 1.0.0

User Guide (MNO)

DPS- MNO-User-Guide-1.0.0

Oct 15, 2018

Revision history

Revision	Date	Description
A		Initial release

Contents

Figures

Tables

1. Introduction

The Device Pairing Subsystem (DPS) is the subsystem of Device Identification, Registration and Blocking System (DIRBS). The main purpose of DPS is to facilitate the pairing of user's devices with their SIMs (IMSIs) over the SMS service. It also generates Pairing-list for DIRBS-Core through which it generates exception lists and black list for MNOs to implement on their EIR.

The Device Identification, Registration & Blocking System (DIRBS) is a country-wide system that is developed to check, identify and discourage non-compliant devices by verifying the installed base of devices currently active in a market. It continuously monitors the mobile eco system as new devices are activated. It can be deployed in collaboration with country's regulatory bodies, Mobile operators and other technology partners.

DIRBS can verify that:

- Devices have properly allocated identifiers and type approval

- Devices are not duplicated or stolen

- Device importation takes place through legal channels

1.1. Purpose

This document is intended for mobile operators to provide IMSIs and other important information that can help DPS in pairing their subscribers.

1.2. Supported Desktop Browsers

Table 1- Supported Desktop Browsers

Name	Version
Internet Explorer	11.0
Firefox 52.5 ESR	57.0
Chrome	63.0
Safari	11.0
Edge	41.16299

1.3. Supported Mobile Browsers

Table 2- Supported Mobile Browsers

Name	Version
Chrome	63.0

Name	Version
UC Browser	11.5
Opera(Android)	44.1
Opera(iOS)	16.0.7
Safari	11.1
Samsung Internet	6.2
Android	4.1.x - 4.3

1.4. Definitions, Acronyms, and Abbreviations

Table 3- Definitions, Acronyms, and Abbreviations

Term	Definition
DIRBS	Device Identification Registration and Blocking System
IAM	Identity Access Management
DPS	Device Pairing Subsystem
MSISDN	Mobile Subscriber Integrated Services Digital Network Number
IMSI	International Mobile Subscriber Identity
MNO	Mobile Network Operator

2. System Description

Table 4- System Description

Feature/Sections	Description
Login Screen	To access the system, authorized user first needs to enter his/her credentials on login page, this login page authenticates user from IAM and redirects user to DPS

Portal Sections	The portal is divided into following sections
	
	• **Header**
	  Header section displays the name of the system, name of the logged in user with logout functionality
	
	• **Navigation Panel**
	  Navigation Panel contains main navigation menu through which user can navigate the whole system
	
	• **Main Content Area**
	  Main Content Area contains all the content to be displayed and actions to be performed for respective feature
	
	• **Breadcrumbs**
	  Breadcrumbs allows user to keep track of their location within the system
	
	• **Footer**
	  Footer contains the software version and copyright text

IMSI Request	Allows user to enter IMSI for respective MSISDN one by one. User can also download all requests in *.csv* file format.
Bulk Upload	Allows user to upload *.csv* file containing MSISDNs with respective IMSIs.

3. System Navigation

3.1. Log-In Screen

1. Enter user credentials i.e. username and password
2. Click on the "Log-In" button

Figure 1- login Screen

3.2. Portal Sections

The portal screen is divided into following sections.

1. **Header** section displays the name of the system, name of the logged-in user with logout functionality
2. **Main Navigation Panel** helps user to navigate through system
3. **Breadcrumbs** is a navigational aid in UI
4. **Main Content Area** contains all relevant information related to the respective feature/option
5. **Footer** contains the version and copyrights of the system
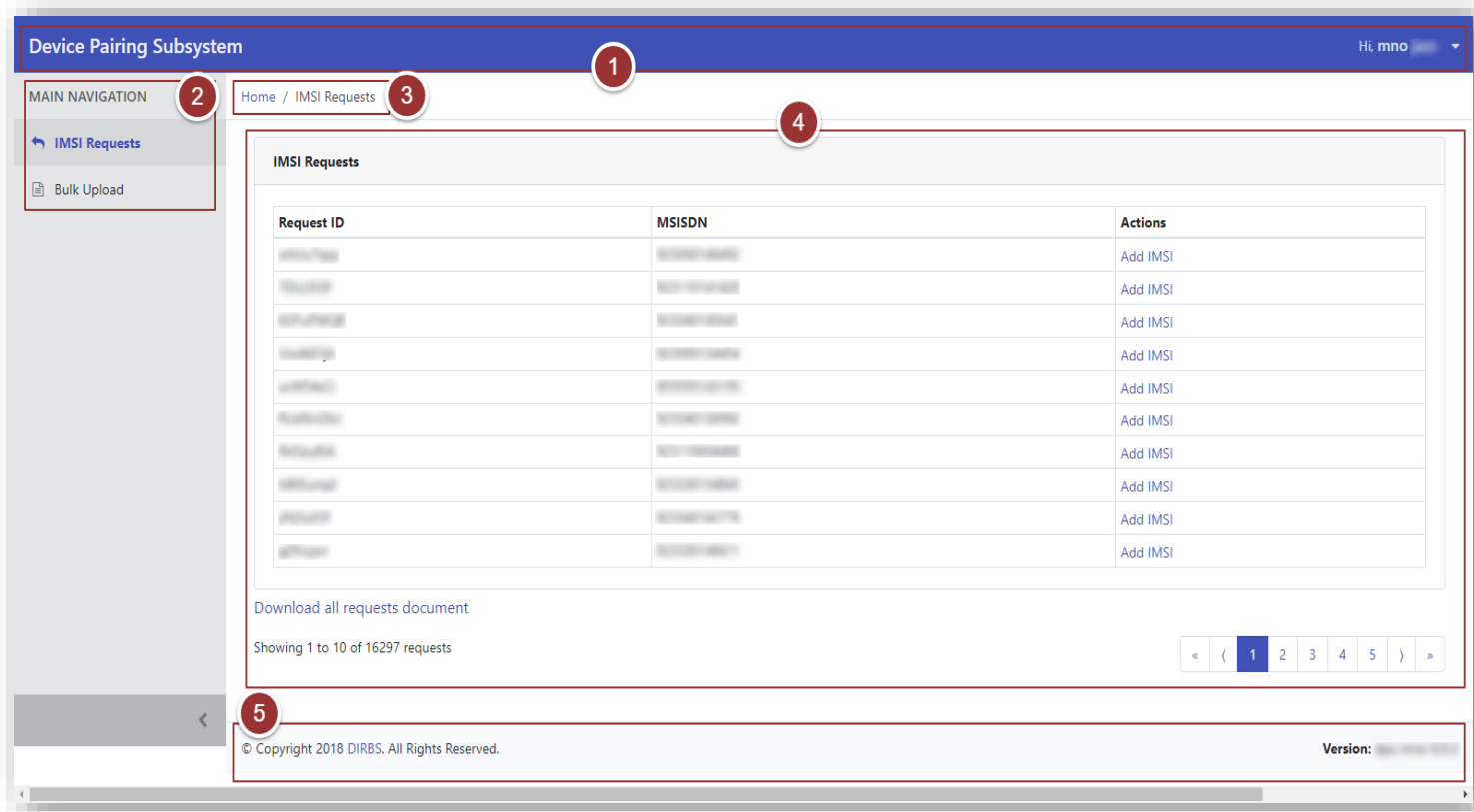
Figure 2- Portal Overview

3.3. IMSI Requests

1. Click on the "IMSI Requests" tab under "Main Navigation" heading
2. To add IMSI for each MSISDN from portal click on "Add IMSI" link against respective MSISDN/Request ID
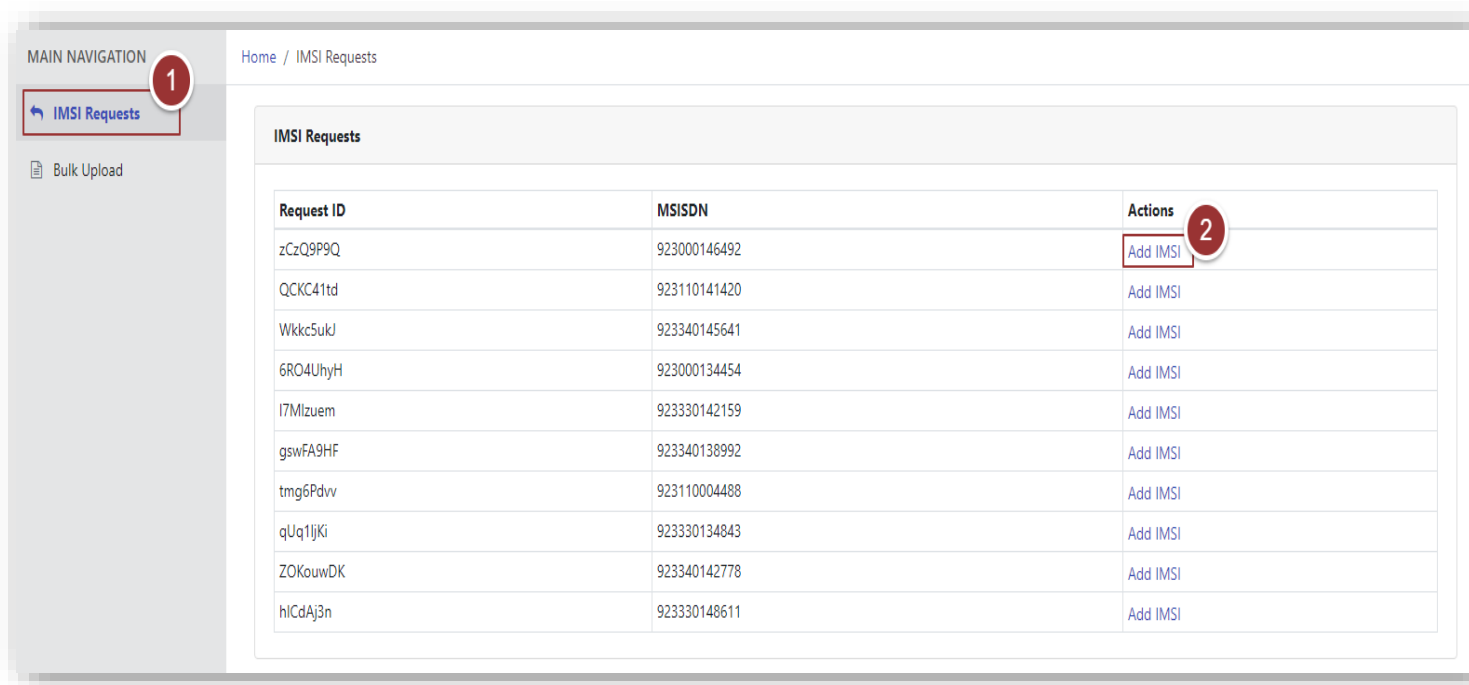

Figure 3- IMSI Requests

3. A popup will appear where user type and retype IMSI for the particular MSISDN
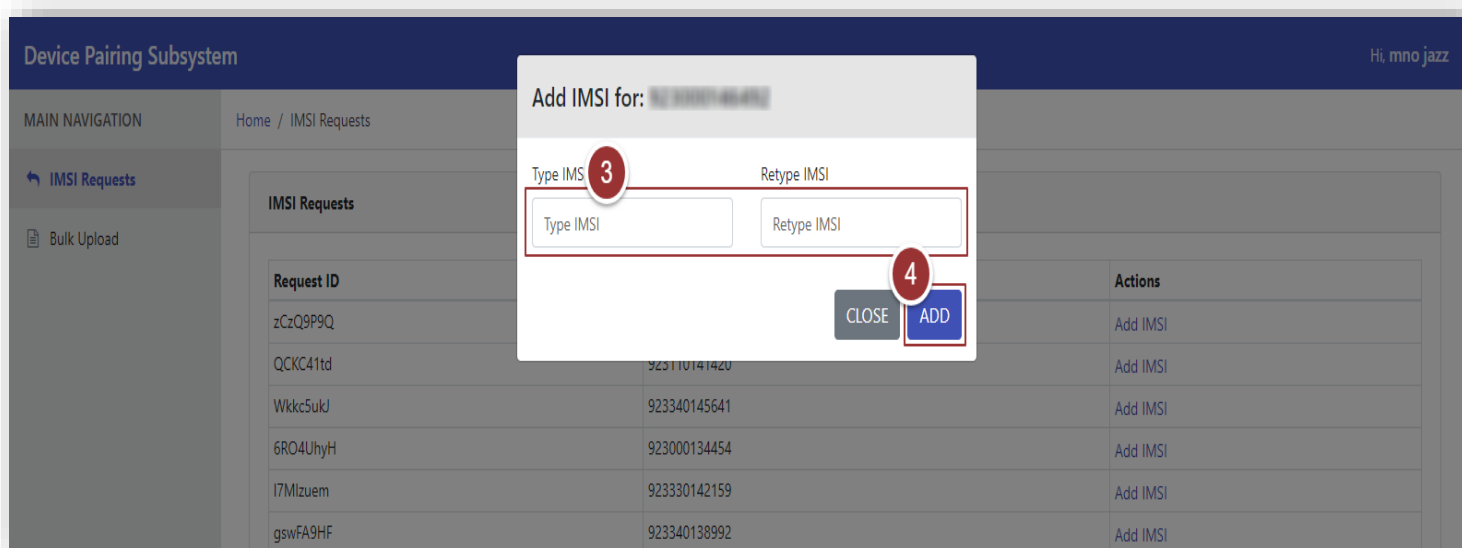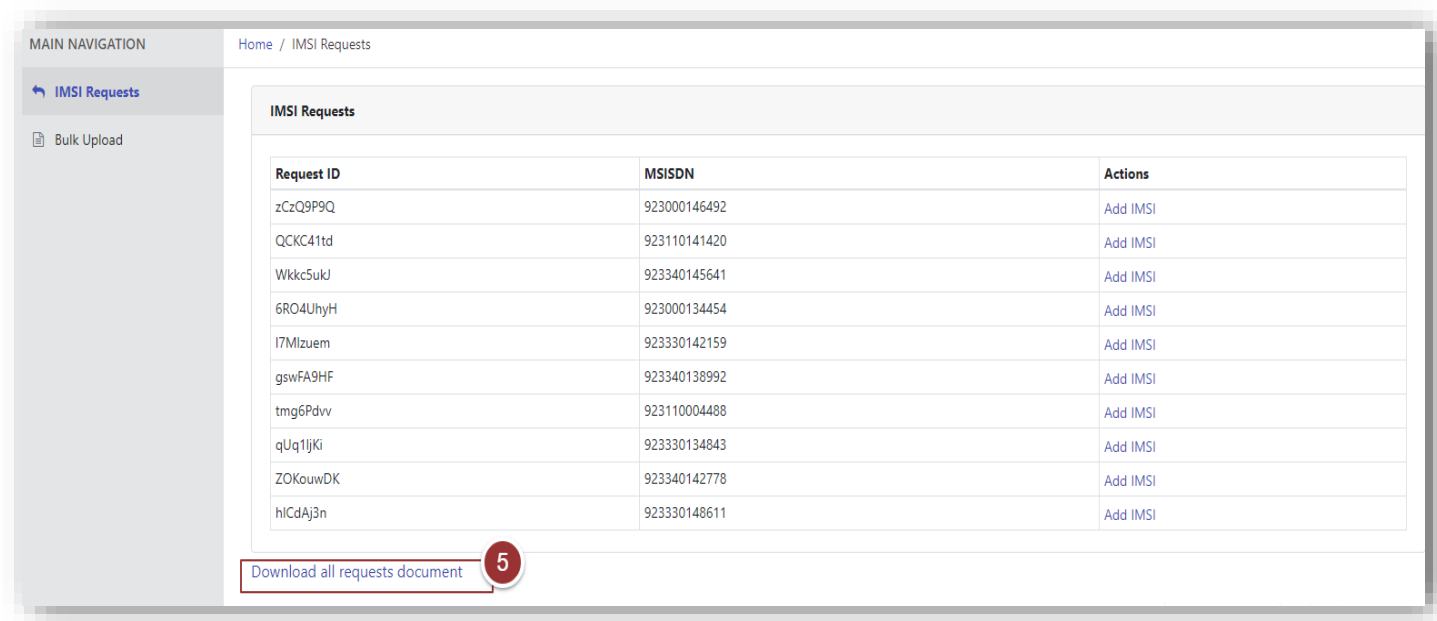4. Click on "Submit" button

Figure 4- Add IMSI

5. To download all IMSI Requests in a file, click on "Download all requests document" link

Request ID	MSISDN	Actions
zCzQ9P9Q	923000146492	Add IMSI
QCKC41td	923110141420	Add IMSI
Wkkc5ukJ	923340145641	Add IMSI
6RO4UhyH	923000134454	Add IMSI
I7MIzuem	923330142159	Add IMSI
gswFA9HF	923340138992	Add IMSI
tmg6Pdvv	923110004488	Add IMSI
qUq1IjKi	923330134843	Add IMSI
ZOKouwDK	923340142778	Add IMSI
hICdAj3n	923330148611	Add IMSI

Figure 5- Download All Requests

3.4. Bulk Upload

1. To submit IMSIs in bulk, click on "Bulk Upload" tab under "Main Navigation" heading
2. To upload a file, click on "Choose File" button and select the required file
   Note: The uploaded file should be .csv file. It is preferable to use the same downloaded file in Section 2.3 and update it with IMSIs.
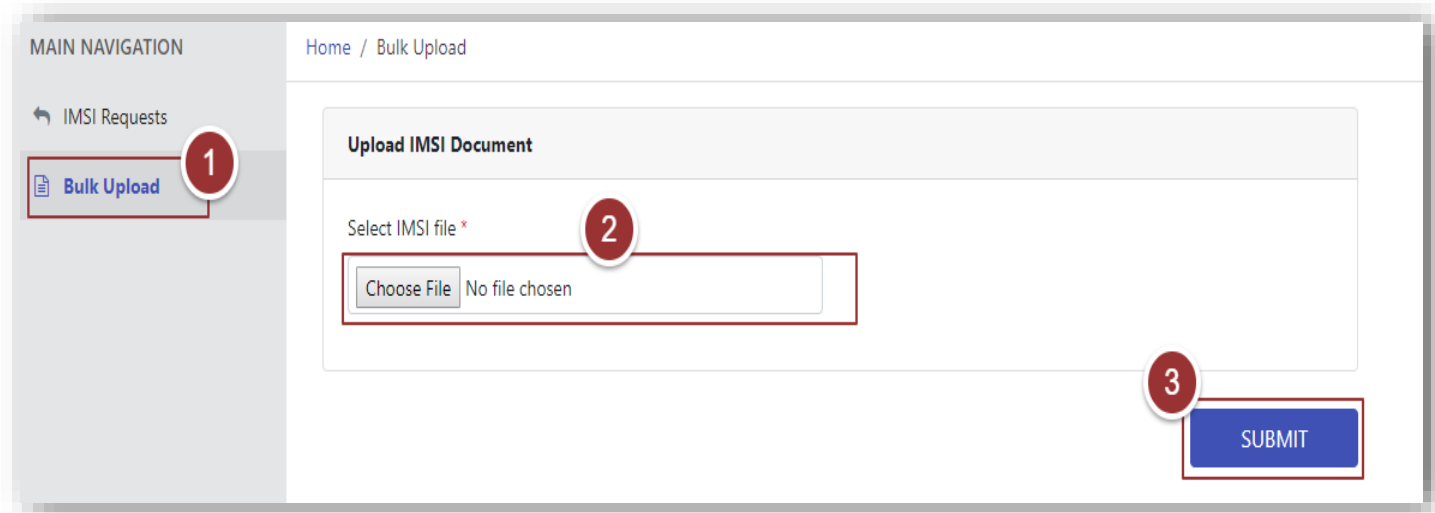3. Click on "Submit" button

Figure 6- Bulk Upload

On successful submission of file, a confirmation message will be displayed with the count of Total, Invalid and Valid MSISDNs/IMSIs.
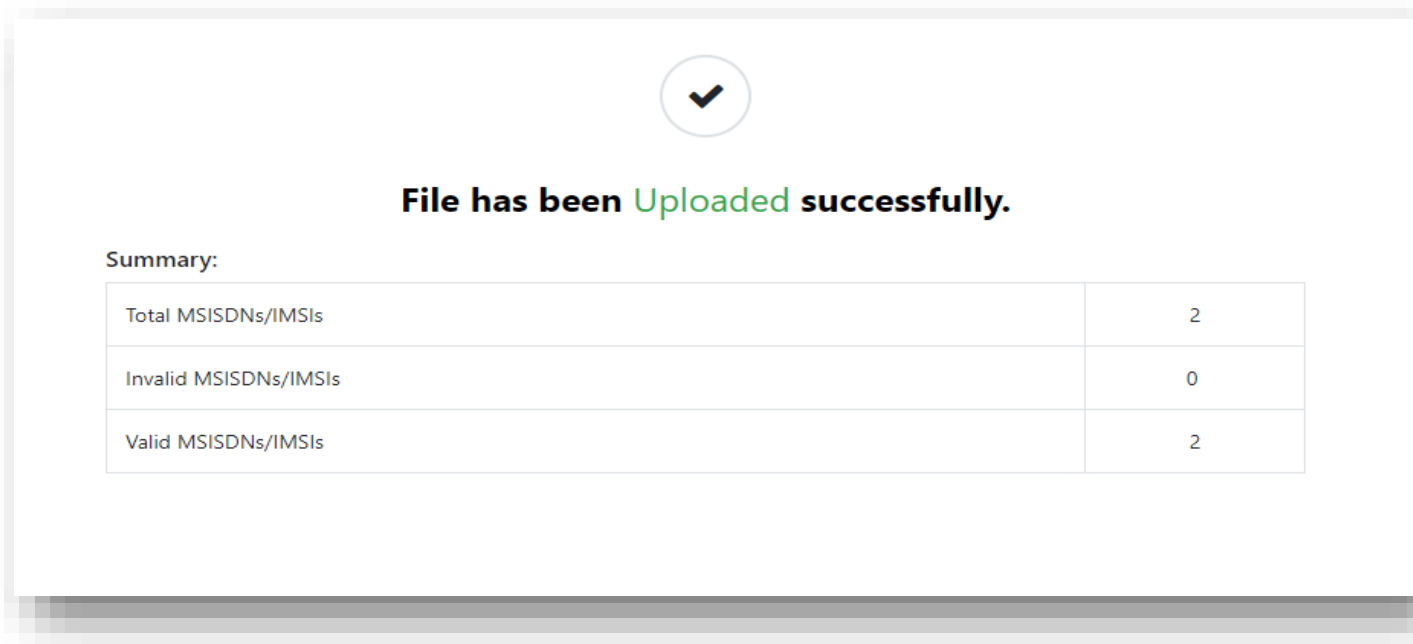

Figure 7- Confirmation Message

4. In case of any Invalid MSISDNs/IMSIs found in the file, a separate downloadable file will be generated by the system.
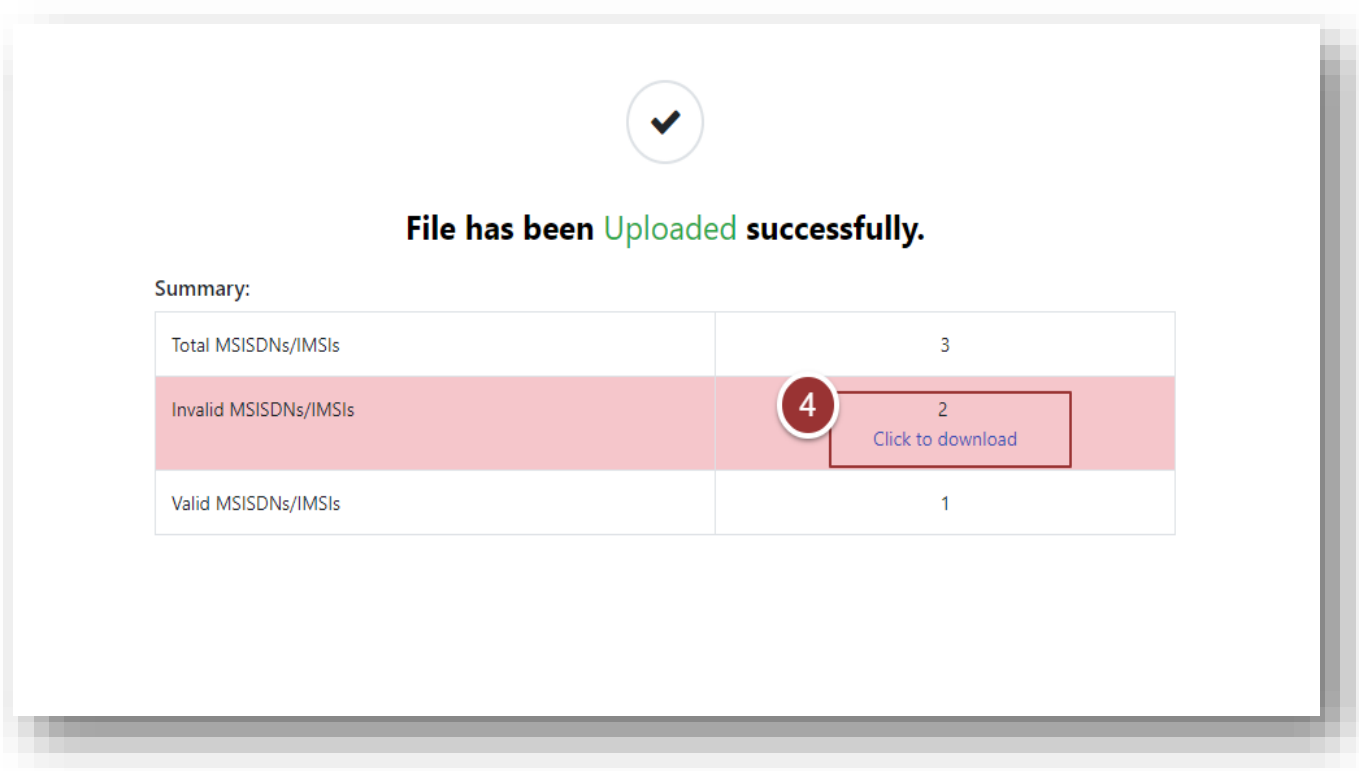

Figure 8- Download Invalid MSISDNs/IMSIs

5. If the uploaded file is not in correct format (.csv), an error message will be displayed.
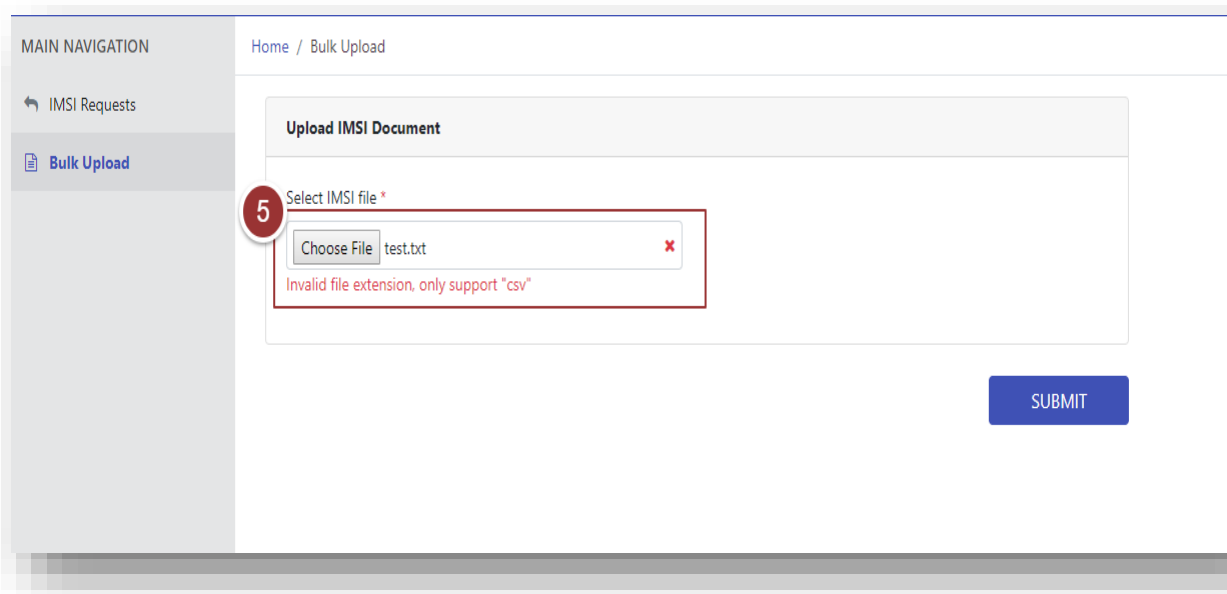

Figure 9- File Format

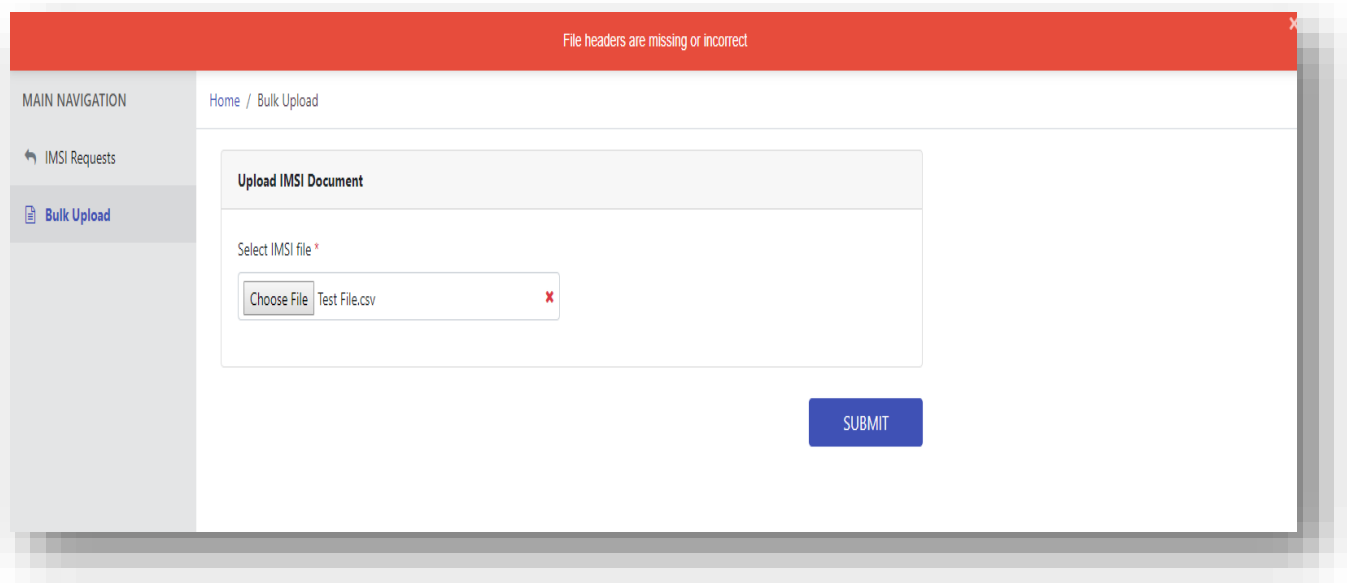An Error Message will be displayed, if the header of the file is not in correct format i.e. MSISDN, IMSI.

Figure 10- Incorrect format