

## Wash Academy

### System Requirements Specifications

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#### Revision History

Version	Description of changes	Changed by	Date
0.1	First Draft	Sai Rahul	14-Nov-2017
0.2	Added MIS requirements	Sai Rahul	23-Nov-2017
0.3	Implementing feedback from Manoj and Kasee	Sai Rahul	1-Dec-2017

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Wash Academy  
System Requirements Specifications



## 1 Introduction & Overview

### 1.1 Overview of Project

Wash Academy is an IVR based training provided to Swachchagrahi's on behalf of Ministry of Drinking Water and Sanitation (MDWS). It is characterized by the following:

- Toll Free long code access
- In-bound IVRs
- Integration with pan-India SMS gateway
- Powered by back-end MoTech platform

**Kommentar [MK1]:** Are we referring to IMI SMS gateway?

**Kommentar [SK2]:** Yes

This document captures the requirements for the pan-India Wash Academy system.

### 1.2 Objective of this document

The purpose of this document is to capture the system requirements of Wash Academy system. This includes functional, non-functional, operability and other miscellaneous requirements.

### 1.3 Scope of this document

This document covers the following functional requirements:

- Data import into the system
- IVR integration workflows
- Reports and MIS

### 1.4 Service Overview

Wash Academy (WA) is a mobile based certification course. It is characterized by the following:

- WA service allows Swachchagrahis (SWCs) to go through a course on the mobile phone that is divided into 11 chapters and each chapter has 4 lessons. At the end of each chapter, there is a simple multiple choice quiz to assess the comprehension of the SWC of topics communicated in the chapter.
- WA service allows the SWC to start/stop the course anytime using bookmarking. When all chapters are finished, and the SWC obtains 50% or higher score, the SWC is eligible for a certificate from the government.
- WA service is open and by default does not restrict access; though certification necessitates that the user is an Active SWC.
- WA service is accessible via IVR. There are simple DTMF entry options for easy handling and navigation by SWCs.
- WA service is a voice-only service (although one SMS is sent to the SWC at the end of the course) accessible via any basic feature mobile-phone and does not necessitate any smart-phone.
- WA service design is based on the premise that SWCs are primarily with education up to grade X.

**Kommentar [MK3]:** What is basis of this statement?

**Kommentar [SK4]:** I wanted your input on whether we have designed the system on any such criteria. Sorry, should have mentioned it explicitly.

## 1.5 Key Assumptions

- There will be two sources of data – web service and offline dumps (converted to CSV).
- General wait time for IVR DTMF responses is ~~changed from 8s to~~ 12s

## 1.6 Open Issues (OI)

#	Issue	Level	Owner	Status	Remarks
WA.OI.001	What all fields will be provided for each Swachchagrahi for us to import.	Major	BBCMA/ MDWS	Open	
WA.OI.002	What is the mechanism for accessing web service? NIC has verbally informed it will be XML based Restful web service. But further details are awaited on frequency of updates and security details	Major	BBCMA/ MDWS	Open	
WA.OI.003	Do we provide the option to restart the course in the same call or gracefully cut the call at the end of the course attempt?	Major	BBCMA	Open Closed	Manoj: As discussed and agreed during the weekly call on 16-Nov, the call will be disconnected gracefully by handling at IMI end. The same has been captured in "MDWS WASH Academy Master Tracker" and marked as closed.
WA.OI.004	Will we have separate SMS content for Anonymous and Registered users?	Major	BBCMA	Open	
WA.OI.005	NIC team informed us that only 10 Swachchagrahis can register in a Panchayat and their IDs will be 1-10. In case, a Swachchagrahi resigns, will the system allow another Swachchagrahi on the same SWC ID within the Panchayat?	Major	BBCMA	Open Closed	Manoj: Please refer to the responses of the queries received after meeting with Mr. O.P Aggarwal ji of MDWS NIC. Currently there is no provision of deleting a user from system.
WA.OI.006	In case the system receives a call from the MSISDN of a resigned Swachchagrahi, should an Anonymous record be created or should the call be allowed and bookmark updated for the resigned Swachchagrahi?	Major	BBCMA	Open Closed	Manoj: There is no provision of deleting a user right now. This needs to be discussed. Also as covered in "WA.GEN.SWC.008" such calls will be rejected.

**Kommentar [MK5]:** Please refer to the responses of the queries received after meeting with Mr. O.P Aggarwal ji of MDWS NIC. The document mentions the fields that will be available.

**Kommentar [SK6]:** The document does not confirm that all location details including State ID & Name, District ID & Name etc would be provided for each Swachchagrahi. Even if they provide a dump of master data, blocks and panchayats keep changing and we need to account for that.

**Kommentar [MK7]:** NIC has asked BBC MA to share the document mentioning web services requirement. NIC will provide the service basis the required document.

**Kommentar [SK8]:** We will close this once they confirm.

**Formatierte Tabelle**

**Formatierte Tabelle**

## 1.7 Assumptions

#	Issue	Level	Owner	Status	Remarks
WA.A.001	MOTECH will be able to configure enabling and disabling anonymous calls easily.	Major	Beehyv	Confirmed	
WA.A.002	IVR will not differentiate between Anonymous and Registered users as long as MOTECH allows them to call.	Major	IMI	Confirmed Pending Confirmation	
WA.A.003	MIS system will not contain charts as the current requirements will confuse MDWS	Major	BBCMA	Confirmed Pending Confirmation	
WA.A.004	Web service and offline dumps will provide all the location ID and names until Panchayat level for each swachchagrahi	Major	BBCMA/ MDWS	Pending Confirmation	

**Formatierte Tabelle**

**Formatiert:** Muster: Transparent (Hellgrün)

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**Kommentar [MK9]:** NIC has confirmed that location Id's are available till Panchayat level and same will be provided in offline dump. To make sure that we get the same in web service, we should include that in our document to NIC related to web service requirement.

**Kommentar [SK10]:** Yes, we have included them in the document shared with NIC. Will close this item once we get a test web service.

## 1.8 System Limitations

Category	Limitations
General	<ul style="list-style-type: none"> <li>Creation of new states or <u>districts</u> of existing states will require additional work and configuration changes.</li> </ul>

## 1.9 Requirement Structure and Numbering Plan

The requirement/issues/action-points are structured in this document as follows:

**WA.< Category>.<Sub-Category>.<Numbering>**

Component	Definition
Product	<ul style="list-style-type: none"> <li>WA</li> </ul>
Category	<ul style="list-style-type: none"> <li>OI: Open Issue for tracking</li> <li>AP: Action Points for tracking</li> <li>GEN: Common/General requirements</li> <li>REP: Reporting Requirements</li> </ul>
Sub-Category (optional)	<p><b>General/Common Requirements (GEN)</b></p> <ul style="list-style-type: none"> <li>LOC: Location Data Management</li> <li>SWC: Swachchagrahi Record and Data Management</li> <li>ANO: Anonymous Users</li> <li>LANG: Language Handling Requirements</li> <li>CFG: Configuration Management</li> <li>BKUP: Backup &amp; Archiving</li> <li>SECU: Security and User Access Control</li> <li>ACCESS: Access to reporting system</li> <li>UI: User Interface workflow for reporting system</li> <li>PACK: Packaging and Installation</li> <li>DEPL: Deployment</li> <li>MNP: Mobile Number Portability Requirements</li> <li>MAINT: Maintainability and extensibility</li> <li>LOG: Logging and Debugging</li> <li>AVAIL: Availability</li> <li>EMAIL: Emailing module</li> </ul> <p><b>Wash Academy (WA)</b></p> <ul style="list-style-type: none"> <li>COURSE: Course structure</li> <li>IVR: IVR Handling Requirements</li> <li>BKMK: Bookmark related requirements</li> <li>CONT: Content Management and Upload</li> <li>SCALE: Service Scale (Capacity)</li> </ul>

## 1.10 Glossary

Abbreviation	Description / Full Form / Explanation
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BBC	British Broadcasting Corporation
BBC MA	BBC Media Action
BMGF	Bill & Melinda Gates Foundation
ESB	Enterprise Service Bus
IVRs	Interactive Voice Response System
WA	Wash Academy
MNP Database	Mobile Number Portability Database
MDS	MOTECH Data Services
MoTech	Mobile Technology For Community Health
MDWS	Ministry of Drinking Water and Sanitation
MSISDN	Mobile Station International Subscriber Directory Number
RFP	Request for Proposal
SMS	Short Messaging Service



## 2 System Overview

### 2.1 Overview

**Wash Academy** service is an inbound IVR ~~mobile~~based high quality, standardized, on-demand training course ~~on~~ to be filled for Swachchagrahis, designed to expand their knowledge of critical sanitation practices, and improve their interpersonal communication skills, which is expected to lead to an improved quality of engagement with rural communities ~~to be filled~~ and enhance their capacity to communicate and engage effectively with families. Swachchagrahis can access the course from any phone by dialing a toll free long code, and complete it at their convenience.

**Kommentar [MK11]:** Please mention exact text

**Kommentar [MK12]:** Please mention exact text

IVR services shall be powered by an open-source platform called **MOTECH (Mobile Technology for Community Health)**. The MOTECH platform combines the integration capabilities of an Enterprise Service Bus (ESB) with a flexible open source application development framework.

### 2.2 Building Blocks

- **MOTECH Platform (sometimes referred to as just MOTECH):** the mobile health platform which combines the integration capabilities of an Enterprise Service Bus (ESB) with a flexible open source application development framework to support many standard use cases through its robust, scalable and interoperable core.
- **BBC Media Action IVR Applications (sometimes referred to as VXML call flows):** The BBC Media Action call flow logic (**VXML scripts**) used in the IVR services.
- **IVR (Interactive Voice Response):** Technology that allows a computer to interact with humans through the use of voice and DTMF tones input via keypad.
- **IVR Services:** Refers to Wash Academy.
- **IVR System:** The voice service delivery platform used by the IVR vendor to connect with PRI lines to execute the VXML scripts.

## Wash Academy

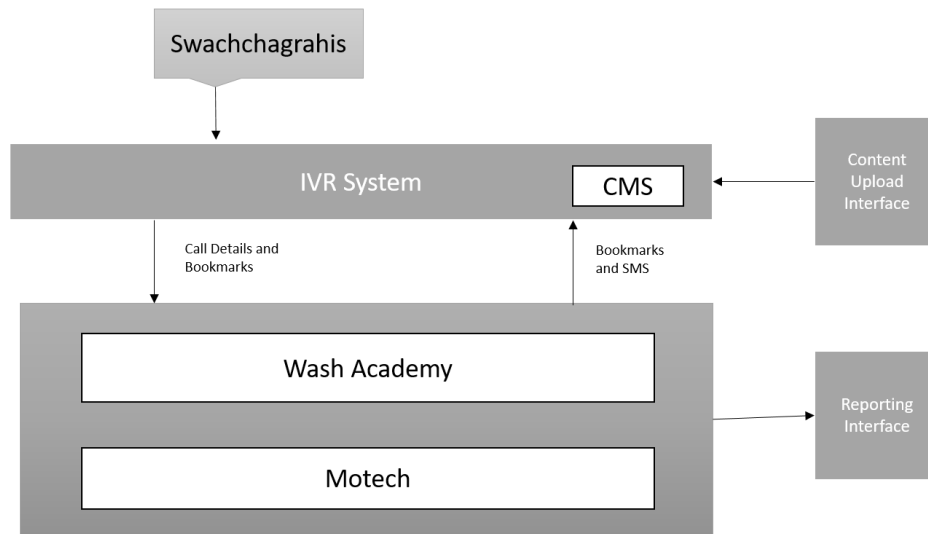


Figure 1: High Level Architecture

### 2.3 User interfaces

- **Content Management System (CMS):** Stores audio content for the IVR services — note that CMS is part of IVR system and not part of MOTECH system.
- **Reports Interface:** Pulls data from MOTECH to deliver online, real time reports on the take up and usage of WA service.

**Kommentar [MK13]:** CMS is internal to IVR like other monitoring interfaces, so should we include CMS here?

## 3 System Requirements

### 3.1 Data & Language Management

#### 3.1.1 Location Data handling

Requirement Id	Description	Comments	Status
WA.GEN.LOC.001	<p>The WA system shall provide means to upload location data in CSV file into its internal database via an API.</p> <p>Multiple upload attempts shall be supported whereby the complete location data may not be available in the beginning.</p> <p>Errors during location data upload shall be logged <u>and shared in form of Import summary report.</u></p>		Pending Approval
WA.GEN.LOC.002	<p>The WA system shall manage a location database having the following parameters to manage the location of Swachchagrahi:</p> <ul style="list-style-type: none"> <li>State</li> <li>District</li> <li>Health block</li> <li>Panchayat</li> </ul> <p>There shall be mapping between descriptive name and codes.</p> <p>The exact definitions of these fields along with presence (mandatory/optional) are provided in Appendix A (refer section 6.2).</p>	<p>The location data is used to link a given FLW record with a particular geographical location. There is one to one link from a Swachchagrahi record to a location record.</p> <p><del>Villages are of two types – Census villages and Non census villages. For Non census villages, data entry person has option to enter the village name. The NMS system will only have one field for Village – regardless of whether it's a census village, Panchayat village, revenue village or otherwise.</del></p>	Pending Approval
WA.GEN.LOC.003	<p>The WA system shall perform the following checks and validation before uploading location data into the location database:</p> <ul style="list-style-type: none"> <li>None of the Mandatory Location fields can be blank</li> <li>Duplicate location data does not already exist in the system</li> </ul> <p>The exact definitions of these fields are provided in Appendix A (refer section <u>5.1-6.2</u>).</p>		Pending Approval

**Kommentar [MK14]:** What is the basis of this statement?

#### 3.1.2 Swachchagrahi Data Handling

Requirement Id	Description	Comments	Status
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WA.GEN.SWC.001	<p>The WA system shall provide means to upload Swachchagrahi data into its internal database via an API via a CSV file.</p> <p>Multiple upload attempts shall be supported whereby the complete Swachchagrahi data may not be available in the beginning.</p> <p>Errors during SWC data upload shall be logged <u>and shared in form of Import summary report.</u></p>		Pending Approval
WA.GEN.SWC.002	<p>WA shall internally generate and maintain an ID for all Swachchagrahis that is called the <b>WA SWC-ID</b>.</p> <p>For external interfaces (including IVR and CSV upload), the Swachchagrahi shall be identified first by the source SWC-ID.</p> <p>The source SWC-ID is a unique combination of Panchayat ID and a value between 1 – 10 assigned to the Swachchagrahi in the Panchayat.</p>	Source SWC-ID will not be available for Anonymous users.	Pending Approval
WA.GEN.SWC.003	<p>The WA system shall maintain the course status of a Swachchagrahi. <u>The course status will be one of the following three options:</u></p> <ul style="list-style-type: none"> <li> <b>Anonymous:</b> Refers to any user who has called the WA service and whose MSISDN number, SWC ID, name, and location data is not available in the Swachchagrahi contact list maintained by the WA system (in other words – only the MSISDN exists in the database). If a Swachchagrahi record is uploaded for such a user, existing information (e.g. call records, language information) of the anonymous user shall not be deleted or over-written – however the Swachchagrahi information not available in the WA shall be added to the record (at which point they will become an Active SWC). </li> <li> <b>Active SWC:</b> Mandatory fields in the record of an SWC are present and following conditions are met: <ul style="list-style-type: none"> <li>SWC must have called WA system once</li> <li>SWC has a valid location (All fields until Panchayat ID are mandatory, as Panchayat ID is part of unique identification from NIC system).</li> <li>SWC has all the following parameters present in its record:</li> </ul> </li> </ul>	<p>In case an SWC whose record does not exist in WA calls via IVR and subsequently, the record of user is updated via file upload (from any source), In such case, the status of Swachchagrahi record shall reflect the changes done via file upload.</p>	Pending Approval

**Kommentar [MK15]:** Can there be a scenario where an Anonymous user has information other than MSISDN (say District - ABC) in the WA DB and we receive a different value (say District – XYZ) in Swachchagrahi record from web service / Offline data.

**Kommentar [SK16]:** No, that is not possible. The only details we have for Anonymous users are MSISDN and Circle.

	<ul style="list-style-type: none"> <li>MSISDN number</li> <li>Name</li> <li>Designation</li> <li>Mandatory parts of Location Data (WA.GEN.LOC.002)</li> </ul> <ul style="list-style-type: none"> <li><b>Inactive SWC:</b> A record of an SWC where all the mandatory fields have been filled in but the SWC has not called WA system <u>even</u> once.</li> </ul>		
WA.GEN.SWC.004	<p>The WA system shall perform the following checks and validation before uploading SWC data into the SWC database:</p> <ul style="list-style-type: none"> <li>If an SWC's record in WA already has an SWC ID, and new data about this FLW is uploaded in CSV format or through web service, then this new data will be considered an Update (see other requirements in this section).</li> <li>SWC has valid location data (i.e., refer WA.GEN.SWC.003).</li> <li>The data shall be validated based on the specified format for each field (i.e. string data, number etc.) and Presence (Mandatory/Optional) as specified in Appendix A. <u>If any of the validations fail, the update will be rejected.</u></li> </ul>		Pending Approval
WA.GEN.SWC.005	<p>The WA system shall allow modification of MSISDN of an existing FLW record using CSV upload or web service by providing new MSISDN number in a record with an existing SWC-ID or.</p> <ul style="list-style-type: none"> <li>If a new MSISDN is uploaded for the same SWC ID (already existing in WA), say SWC-A, then the old MSISDN will be replaced with the new MSISDN. A history/change table shall be created with old and new MSISDN number for the SWC-A.</li> <li>If the MSISDN number already exists for a different SWC (with a different SWC ID) <u>or an Anonymous user</u> in WA the request shall be rejected.</li> <li><u>If we start tracking resignations, the MSISDN check will be done only on In-Job SWCs.</u></li> </ul>	<p>WA shall allow only one in-job SWC to have any given MSISDN number.</p> <p>Change of MSISDN number is not recommended for an SWC but none-the-less very likely to happen in states where government SIMs have not been distributed.</p> <p>In order to realize use-case of reusing an existing MSISDN number, either the MSISDN number of SWC-B has to be changed, or SWC-B has to be marked resigned.</p>	Pending Approval

**Kommentar [MK17]:** What if there are multiple updates for a single SWC Id in a batch which is under process?

**Kommentar [SK18]:** This is a valid question and can only be answered after we take a look at the sample data or web service shared by NIC.

WA.GEN.SWC.006	The WA system shall provide means to modify the address/location of a SWC using CSV upload or web service.  The language mapping for the SWC does not change due to change in location information.  <u>In case the SWCs block or panchayat does not exist in the master tables, they will be auto-updated. The same does not apply for State and District as they have to be configured.</u>		Pending Approval
WA.GEN.SWC.007	WA shall note and make available to the user all rejected/ <del>ignored</del> uploaded SWC records		Pending Approval
WA.GEN.SWC.008	The SWC system shall provide means to mark an FLW as resigned using CSV upload or web service.  Once an SWC is marked resigned, any incoming call with MSISDN that is same as that of resigned SWC shall be rejected. (WA.OI.006)  The MSISDN of a resigned SWC would be made available so that another SWC can register into WA system on the same MSISDN.		Pending Approval

**Kommentar [MK19]:** Please clarify the definition of ignored?

**Kommentar [SK20]:** In Wash, the updates would be ignored only if we get resigned Swachchagrahis in future. In NSP, we were ignoring non-Ashas as well.

### 3.1.3 Anonymous Users Data Handling

Requirement Id	Description	Comments	Status
WA.GEN.ANO.001	The WA system shall provide option to switch between allowing and disallowing anonymous users to call into the system.		<del>Pending</del> Approved
WA.GEN.ANO.002	The WA system shall consider any unregistered MSISDN or MSISDN of resigned Swachchagrahi as Anonymous.  In case, the MSISDN is not registered into the system, an anonymous user record will be created on that MSISDN and corresponding bookmark or course completion records would be maintained, linked to the WA <del>SWC-ID</del> of the anonymous records.	Even though, the internal WA ID is called SWC-ID, these anonymous users would be reported separately in the MIS.	Pending Approval
WA.GEN.ANO.003	The WA system will convert an existing anonymous user into a registered user in case a new valid Swachchagrahi record is updated into the system through either CSV upload or web service update, the anonymous user will be converted into an Active SWC (Refer to WA.GEN.SWC.003)		<del>Pending</del> Approved
WA.GEN.ANO.004	The WA system will reject a MSISDN update to an existing SWC, in case the MSISDN is already		Pending

**Kommentar [MK21]:** This is approved.

**Kommentar [MK22]:** Does that mean Anonymous users will also be assigned SWC-Id?

**Kommentar [SK23]:** Yes, Wash Academy will allocate an internal SWC ID for anonymous users as well as they are maintained in same table as Swachchagrahis with a different course status.

**Kommentar [MK24]:** Does this mean that a record has been received from web service / csv and that record is having the mobile number same to that of an Anonymous user in the system? If yes, This is approved.

**Kommentar [SK25]:** Yes.

**Kommentar [MK26]:** In my opinion, this should be covered under section "WA.GEN.SWC.005" which is related to MSISDN updates.

**Kommentar [SK27]:** Mentioned there as well, but would like to keep a separate item as well for this.

	present in the system as an anonymous user.		Approval
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### 3.1.4 Language Selection Requirements

Requirement Id	Description	Comments	Status
WA.GEN.LANG.001	<p>WA shall maintain a mapping between a geographical location of a state (i.e. set of districts) and the "Language-location code" used in that location.</p> <p>There shall be one and only one "Language-location code" used in a given geographical location.</p> <p>The mapping shall be uploaded in WA when the service is deployed in a state.</p>	<p>If there is only one "Language-location code" in the state, all districts shall have same "Language-location code"; else, multiple groups shall be formed, each group having a set of districts and having a unique "Language-location code".</p> <p>Division or reorganization of geographical location for "Language-location code" mapping is not supported and an item for future.</p>	ApprovedPending Approval
WA.GEN.LANG.002	<p>WA shall maintain a mapping between a telecom circle and the associated districts of a state contained in a circle.</p> <p>This mapping shall be used to determine the state and consequently the "Language-location code" used in the state.</p>	<p>A telecom circle can have various mapping with states:</p> <ul style="list-style-type: none"> <li>One-circle-to-one-state mapping (e.g. Rajasthan)</li> <li>One-circle-to-many-state mapping (e.g. North-east, Bihar + Jharkhand or MP + Chattisgarh)</li> <li>Many-circle-to-one-state mapping (e.g. UP-east and UP-west)</li> </ul>	ApprovedPending Approval
WA.GEN.LANG.003	<p>If the location information of SWC is known corresponding to the received MSISDN number, then the WA system shall use the language-location code to determine the language to be used for the corresponding number.</p> <p>Else (i.e. the MSISDN number is anonymous and no location information is available), WA.GEN.LANG.004 applies.</p>		ApprovedPending Approval
WA.GEN.LANG.004	<p>If the location information of SWC is not known corresponding to the received MSISDN number, then following rules for language determination apply:</p> <p>— Case A: If the circle information cannot be determined, the user is prompted in the national default language by the IVR to</p>	<p>Case B2 covers two types of cases. One case is of north-east where there are multiple states in a circle and consequently multiple languages. Another case is that where multiple languages are used within a state. Both cases are covered in</p>	Pending Approval

**Kommentar [MK28]:** This is approved.

**Kommentar [MK29]:** This is approved.

**Kommentar [MK30]:** This is approved.

	<p><del>enter their Language-location code via DTMF.</del></p> <ul style="list-style-type: none"> <li> <p><b>Case B:</b> If the circle information can be determined and</p> <ul style="list-style-type: none"> <li> <p><b>Case A1:</b> there is only one “Language-location code” possible in the circle (based on geographical coverage of the circle), then the corresponding “Language-location code” shall be used for the received MSISDN number.</p> </li> <li> <p><b>Case B2:</b> there are multiple languages possible in the circle (based on geographical coverage of the circle), the user is prompted in the circle’s default language by the IVR to enter their Language-location code via DTMF.</p> </li> </ul> </li> </ul>	this scenario.	
WA.GEN.LANG.005	Once the “Language-location code” of a SWC is determined by any of the requirements listed above, the same “Language-location code” shall be used in future and the language determination process shall not be repeated.		<del>Pending Approval</del> Approved
<del>WA.GEN.LANG.006</del>	<p><del>The WA system shall provide means to modify the language of a SWC by providing a new language code along with an existing identifier using CSV upload.</del></p> <p><del>A history/change table shall be created with old and new language for the existing SWC.</del></p>		<del>Pending Approval</del>

**Kommentar [MK31]:** There is no such flow on the IVR, this needs to be corrected.

**Kommentar [SK32]:** Please check the API document for further details, this is needed for Anonymous users

**Formatiert:** Keine Aufzählungen oder Nummerierungen

**Kommentar [MK33]:** There is no such flow on the IVR, this needs to be corrected.

**Kommentar [SK34]:** Please check the API document, this is needed in case of Anonymous users.

**Kommentar [MK35]:** This is approved.

**Kommentar [MK36]:** Please clarify. There is no such option to modify the language directly. It is linked to Location.

## 3.2 Operability

### 3.2.1 Configuration Management

Requirement Id	Description	Comments	Status
WA.GEN.CFG.001	<p>The WA system shall have means to provide configuration parameters to various services.</p> <p>The configuration parameters shall be classified into following:</p> <ul style="list-style-type: none"> <li> <p><b>System Parameters</b> (e.g. IP address, DB location, FTP/SFTP parameters) that are handled by property/config files.</p> </li> <li> <p><b>Business Logic parameters</b> related to WA service (e.g. Capping rules, Language settings, etc.) that are handled by property/config files.</p> </li> </ul> <p>For key configuration parameters, refer section</p>		<del>Approved</del> Pending Approval

**Kommentar [MK37]:** This is approved.



	Configuration Parameters.		
WA.GEN.CFG.002	The modification of WA parameters that critically impacts any of the IVR services shall be done during system downtime.		ApprovedPending Approval
WA.GEN.CFG.003	The WA system shall be designed such that all configuration parameters are externalized.	Hard coded default shall be avoided.	Pending Approval
WA.CFG.004	The WA system level configuration parameters shall be stored in a version controlled file. Changes to any configuration parameter shall be first done in version management system and subsequently taken to use.	Hard coded default shall be avoided.	Pending Approval

**Kommentar [MK38]:** This is Approved.

**Kommentar [MK39]:** Can we list down the configuration parameters?

**Kommentar [SK40]:** It is out of scope of this document to identify and list out the parameters and it is also difficult to finalize it now. Some of the possible parameters are Enabling Anonymous user and Enabling capping.

**Kommentar [MK41]:** Can we list down the configuration parameters?

**Kommentar [SK42]:** Please refer to the response above.

**Kommentar [MK43]:** This is approved.

### 3.2.2 Security and User Access Control

Requirement Id	Description	Comments	Status
WA.GEN.SECU.001	The WA system shall use HTTPS/SSL encryption on all network connections.	Some of the examples where this applies include: <ul style="list-style-type: none"> <li>IVR and MOTECH (<a href="https">https</a>)</li> <li>MOTECH and its databases (ActiveMQ &amp; MySQL)</li> </ul>	Pending Approval
WA.GEN.SECU.002	The WA system shall not log any personal information that can identify a user.	There may not be an automated way to detect or prevent this. Instead disk encryption for the log files may be used and the log files will be purged on a regular pre-defined schedule (e.g. using logrotated).	Pending Approval
WA.GEN.SECU.003	The WA system shall follow the following security best practices: <ul style="list-style-type: none"> <li>Systems should not run as privileged users</li> <li>File permissions should be set to the least open setting possible.</li> <li>All ports should be closed except those required for services etc.</li> <li>Root user connection over SSH will be disabled</li> <li>Password policy enforcing strong passwords will be in place</li> <li>SSH will be installed on a non-standard port</li> <li>SSH password authentication will be disabled (only key based authentication will be allowed)</li> <li>Intrusion prevention system like Fail2Ban will be installed.</li> </ul>		ApprovedPending Approval

**Kommentar [MK44]:** Is this covering DB as well. If yes, please mention that personal information stored will be encrypted or not?

**Kommentar [SK45]:** No, this is not for database. If we encrypt data in the database, it will become tedious to generate reports or troubleshoot.

**Kommentar [MK46]:** This is Approved.

	<ul style="list-style-type: none"> <li>A process for applying OS patches will be documented and followed</li> </ul>		
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### 3.2.3 General Reporting Requirements

Requirement Id	Description	Comments	Status
WA.GEN.REP.001	The WA system shall provide an interface for viewing and <del>saving</del> download of reports.		ApprovedPending Approval
WA.GEN.REP.002	The WA system shall support generation of aggregate reports for a date range that has a start date and an end date.		ApprovedPending Approval
WA.GEN.REP.003	The NMS system shall allow saving of reports in Excel, PDF and CSV formats.		ApprovedPending Approval
WA.GEN.REP.004	The WA system shall generate and save pre-configured reports at pre-defined periodicity using FTP on <del>pre-configured FTP Server provided by MoHFW MoDWS</del> in format as per supported formats of underlying reporting framework.		Pending Approval
WA.GEN.REP.005	The WA system shall store all call details received from IVR for reporting purpose as specified in various reports in Appendix B of this document.	Also see WA.GEN.LOG.009.	ApprovedPending Approval
WA.GEN.REP.006	The WA system shall provide means to access reports over public internet using secure interface (using HTTPS/SSL). No other interface other than HTTPS/SSL will be made available.	No other interface shall be made available on public internet.	ApprovedPending Approval
WA.GEN.REP.007	The WA system shall provide reports having individual FLW/ <del>beneficiary</del> records/call-records at the state level. Reports at national level shall be supported where an aggregate view is to be provided.	This requirement limits the number of records that can be available in one exported report.	ApprovedPending Approval

Kommentar [MK47]: This is Approved.

Kommentar [MK48]: This is Approved.

Kommentar [MK49]: This is Approved.

Kommentar [MK50]: Please confirm if this is the server required from MoDWS or will it be part of our infrastructure.

Kommentar [SK51]: Removed the dependency on MoDWS, it is part of existing infrastructure.

Kommentar [MK52]: This is Approved.

Kommentar [MK53]: This is Approved.

Kommentar [MK54]: This is Approved.

### 3.2.4 Backup and Archiving

Requirement Id	Description	Comments	Status
WA.GEN.BKUP.001	The <del>Motech component of</del> WA system shall take a full back-up every Sunday and incremental back-ups for the rest of the week. Two most recent full back-ups will be <del>maintained</del> maintained, and the previous versions would be purged from the storage.		ApprovedPending Approval
WA.GEN.BKUP.002	The WA system shall archive the call records and SWC information for the last 3 years.	The procedure to realize this requirement is outside the scope of this document. This is	ApprovedPending Approval

Kommentar [MK55]: This is Approved.

Kommentar [MK56]: This is Approved.

		basically a support requirement.	
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### 3.3 Non-Functional Requirements

#### 3.3.1 Packaging and Installation Requirements

Requirement Id	Description	Comments	Status
WA.GEN.PACK.001	The WA shall be packaged and made available in a format and location accessible to installation scripts. .		Pending Approval
WA.GEN.PACK.002	The WA shall use installation scripts to deploy the WA SW.		ApprovedPending Approval

**Kommentar [MK57]:** Not clear, please clarify.

**Kommentar [SK58]:** This signifies that the modules built as part and extension of Motech platform would be readily available for packaging and deployment at a location which can be accessed by the scripts.

**Kommentar [MK59]:** This is Approved.

#### 3.3.2 Deployment Requirements

Requirement Id	Description	Comments	Status
WA.GEN.DEPL.001	The WA system shall ensure that the service can be deployed in phased manner across states.	It shall not be necessary that content of all states are ready at the time of deployment.	ApprovedPending Approval
WA.GEN.DEPL.002	The WA deployment shall be relevant for all the states of India (see Appendix D: States, Union Territory and Circles in India).  Configuration Information (refer section Configuration Parameters) of any given state shall be fed into WA only when the service is to be brought into service for that state.  Information of a state that does not exist as of writing of this requirement (as per Appendix D: States, Union Territory and Circles in India) can be provisioned provided the creation of new state does not lead to geographical re-organization of boundaries.	Re-organization of districts and boundaries of states leading to data re-organization is not supported.	ApprovedPending Approval
WA.GEN.DEPL.003	The WA deployment shall consider all Union Territories (UT) of India to be mapped to a given state as per Appendix D: States, Union Territory and Circles in India.  Any state specific attribute of a UT shall be derived from its mapped state.  Towards this objective, Delhi NCR shall be considered a separate state (and not a union territory even though it does not have full statehood).	The mapping of UT to state is derived from the telecom circle to which the UT belongs.	ApprovedPending Approval
WA.GEN.DEPL.004	The WA system shall maintain deployment status for each state.  If any incoming request is received for the		ApprovedPending Approval

**Kommentar [MK60]:** This is Approved.

**Kommentar [MK61]:** This is Approved.

**Kommentar [MK62]:** This is approved.

**Kommentar [MK63]:** This is Approved.

	<p>service from a state that is Not-deployed in that state, then appropriate error message shall be played (e.g. Service Not Available in the state) in standard Hindi.</p> <p>Deployment state of service shall not influence the data upload procedures mentioned in Data &amp; Language Management section (i.e. WA <del>and beneficiary</del> data upload for a given state shall be allowed even if the service is not deployed in the state).</p>		
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### 3.3.3 Mobile Number Portability

Requirement Id	Description	Comments	Status
WA.GEN.MNP.001	The WA system shall ensure that the intra-circle Mobile Number Portability (MNP) does not affect the services to an SWC.	<p>Intra-circle portability should be largely transparent to the user. Its records or language or other aspects should largely be unchanged.</p> <p>Number portability shall not lead to change in location information of SWC unless done otherwise.</p>	<p>Pending</p> <p>Approval</p>
WA.GEN.MNP.002	The WA system shall ensure that the inter-circle Mobile Number Portability (MNP) does not affect the services to an SWC.	<p>Inter-circle portability should be largely transparent to the user. Its records or language or other aspects should largely be unchanged.</p> <p>Number portability shall not lead to change in location information of WA unless done otherwise.</p>	<p>Pending</p> <p>Approval</p>

**Kommentar [MK64]:** Please clarify.

**Kommentar [SK65]:** These two points are documented to ensure that MNP does not have any impact on the service. The user should be able to access the service from circles where we are active and even if they change circle, we do not try to update their location details in our database.

**Kommentar [MK66]:** Please clarify.

**Kommentar [SK67]:** Please refer to above response.

### 3.3.4 Maintainability and Extensibility Requirements

Requirement Id	Description	Comments	Status
WA.GEN.MAINT.001	WA system shall follow modular design principles that make addition of new services simple.		<p>Approved</p> <p>Pending Approval</p>
WA.GEN.MAINT.002	WA system shall have no duplicate code.	This shall be subject to a threshold of minimum allowed limit as decided in the software coding guidelines [5].	<p>Approved</p> <p>Pending Approval</p>
WA.GEN.MAINT.003	WA system shall have no dead code.		<p>Approved</p> <p>Pending Approval</p>
WA.GEN.MAINT.004	WA system shall have adequate comments to allow easy comprehension of the code.		<p>Approved</p> <p>Pending Approval</p>

**Kommentar [MK68]:** This is approved.

**Kommentar [MK69]:** This is approved.

**Kommentar [MK70]:** This is approved.

**Kommentar [MK71]:** This is approved.

WA.GEN.MAINT.005	WA system shall have an implementation approach whereby all IVR interface code shall be contained in its own module such that a new IVR vendor could be added without requiring code changes to the applications or reports.		Approved Pending Approval
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Kommentar [MK72]: This is approved.

### 3.3.5 Logging and Debugging Requirements

Requirement Id	Description	Comments	Status
WA.GEN.LOG.001	WA system shall perform all logging through a logging framework.  The log levels shall be runtime configurable.	Printing to stdout should not remain in the production system.	Approved Pending Approval
WA.GEN.LOG.002	WA system shall allow the log levels to be configurable. There shall be following log levels: TRACE, DEBUG, INFO, WARN, ERROR, FATAL		Approved Pending Approval
WA.GEN.LOG.003	WA system shall maintain history of all changes done in a given FLW record		Pending Approval
WA.GEN.LOG.004	WA system shall maintain history of changes done in SWC information database including date-time stamp, number of records successfully uploaded, number of records failed to be uploaded, reason of error or error file name etc.		Approved Pending Approval
WA.GEN.LOG.005	WA system shall maintain a history of all changes made to SWC records regardless of the source of the modification.		Approved Pending Approval
WA.GEN.LOG.006	WA system shall maintain a history of all changes done during upload of SWC information including date-time stamp, number of records successfully uploaded, number of records failed to be uploaded, reason of error or error file name etc.		Approved Pending Approval
WA.GEN.LOG.007	WA system shall maintain history of all changes done in a given Location record		Approved Pending Approval
WA.GEN.LOG.008	WA system shall maintain history of all changes done during upload of Location information including date-time stamp, number of records successfully uploaded, number of records failed to be uploaded, reason of error or error file name etc.		Approved Pending Approval
WA.GEN.LOG.009	WA system shall log all interactions with IVR including but not limited to the following: <ul style="list-style-type: none"> <li>Incoming Call</li> <li>Outgoing Call</li> <li>Outgoing SMS</li> <li>Bookmark information</li> <li>Other Message Exchanges</li> </ul>	Also refer WA.GEN.REP.006.	Pending Approval
WA.GEN.LOG.010	WA system shall have audit trail logs that includes but not limited to the following: <ul style="list-style-type: none"> <li>Any WA CSV upload</li> <li>Any WA configuration change related to business logic (refer WA.CFG.001)</li> </ul>		Approved Pending Approval

Kommentar [MK73]: This is approved.

Kommentar [MK74]: This is approved.

Kommentar [MK75]: Can we list down what All changes are we covering?

Kommentar [SK76]: This can be responded to only after we receive sample data from NIC.

Kommentar [MK77]: This is approved.

Kommentar [MK78]: This is approved.

Kommentar [MK79]: This is approved.

Kommentar [MK80]: This is approved.

Kommentar [MK81]: This is approved.

Kommentar [MK82]: There are no outgoing calls expected to happen from the IVR platform.

Formatiert: Schriftart: 9 Pt.

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Kommentar [MK83]: This is approved.

	The audit trail log shall include event details, date/time of event and user credential information among others.		
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### 3.3.6 Availability Requirements

Requirement Id	Description	Comments	Status
WA.GEN.AVAIL.001	WA system shall have availability figure of 99% that translates into downtime of over 3.5 days in a year.	This figure excludes planned downtime for configuration changes, data upload and other planned changes.	Approved <del>Pending Approval</del>

**Kommentar [MK84]:** This is approved.

## 4 Requirements

### 4.1 Functional Requirements

#### 4.1.1 Service Access

Requirement Id	Description	Comments	Status
WA.GEN.ACCESS.001	WA shall be accessible via a toll-free long code.	Exact long code shall be finalized during deployment.	ApprovedPending Approval
WA.GEN.ACCESS.002	WA, as default configuration, shall allow unlimited usage. However this must be configurable as capping on usage may be introduced at any point by MDWS.		ApprovedPending Approval
WA.GEN.ACCESS.003	WA shall allow to set capping rules as follows: <ul style="list-style-type: none"> <li>No Capping Or</li> <li>National Capping Or</li> <li>State-specific Capping (Capped/Uncapped)</li> </ul> If the service is capped, then the usage limit shall be as per WA.ACCESS.004.	By default, the WA service shall be Uncapped (i.e. No Capping). However, it shall be possible to set single cap across whole nation or state specific capping policy.	ApprovedPending Approval
WA.GEN.ACCESS.004	For national capping, it shall be possible to set single usage limit across the nation – in number of pulses – for WA usage.  For state-specific capping, it shall be possible to set per STATE usage limit – in number of pulses – for WA usage.	By default this option shall not be used. However, if some state wants to restrict usage, then certain restrictions can be imposed so this option is provided by the software.	ApprovedPending Approval
WA.GEN.ACCESS.005	WA access shall by default be open to all without any access validation related to status of an SWC with restrictions specified in NMS.GEN.DEPL.004.		ApprovedPending Approval

**Kommentar [MK85]:** This is approved.

**Kommentar [MK86]:** This is approved.

**Kommentar [MK87]:** This is approved.

**Kommentar [MK88]:** This is approved.

**Kommentar [MK89]:** This is Approved.

#### 4.1.2 Course Structure & Certification

Requirement Id	Description	Comments	Status
WA.GEN.COURSE.001	WA course shall have many chapters each divided into set of lessons. <ul style="list-style-type: none"> <li>The course shall have 11 chapters.</li> <li>Each chapter shall have 4 lessons. One lesson is conveyed to the SWC via single message.</li> <li>Each chapter shall have a quiz with fixed set of 4 questions at the end of the chapter.</li> </ul>	Each lesson is approximately 2.5 minutes long Each quiz is approximately 6 minutes in length The whole course is approximately 240 minutes in length, including prompts.	Pending Approval

**Kommentar [MK90]:** Can we remove the comments related to duration as this is still not final for WA.

WA.GEN.COURSE.002	<p>WA course shall be considered to have successfully finished if:</p> <ul style="list-style-type: none"> <li>The SWC has finished listening to all the lessons of all the chapters.</li> <li>The SWC has taken all the quizzes of all the chapters.</li> <li>The SWC has attained at least 50% marks in the quiz (22 or greater marks out of 44).</li> </ul> <p>Once course is completed, the call shall be disconnected and the bookmarks are reset. When the user dials next time, the user is automatically taken to welcome message.</p>		ApprovedPending Approval
WA.GEN.COURSE.003	<p>If SWC completes WA course successfully (either first time or during re-attempt) then WA service shall send an SMS to the SWC with a reference number.</p> <p>The SMS sent to user shall be in native language in Roman Characters.</p> <p>The SWC-WA system shall track delivery notification of the SMS and continue retry of SMS once every day until message is submitted to SMSC, till successful delivery for configurable number days.</p>	<p>The reference number is concatenation of MSISDN, Location Id and Course-Repeat attempt.</p> <p>The certificates are given to SWCs who are identified as being genuine by the local authority. It is outside the scope of this document if certificates are re-issued if the SWC successfully completes the course and gets a certificate but for some reason decides to do the course again. From SW point of view, the handling of first successful attempt and re-attempt shall be same.</p> <p>Location Id is a unique identifier for a particular record of location data. For an anonymous user, location Id is set to default value (refer section Configuration Parameters).</p>	Pending Approval
WA.GEN.COURSE.004	<p>WA service shall maintain count of number of times the course is attempted and also allow the user to reattempt the chapter or restart the whole course from beginning.</p>	<p>There shall be no limitation on number of re-attempts.</p>	ApprovedPending Approval
WA.GEN.COURSE.005	<p>The WA service shall save the last quiz score of a given chapter. Re-attempt of quiz shall lead to overwriting of the score of the re-attempted chapter with new score without any other consideration.</p>	<p>WA service shall not check if the score has increased or decreased.</p>	ApprovedPending Approval
WA.GEN.COURSE.006	<p>The WA service shall provide means to</p>	<p>This is needed in case SWC has</p>	ApprovedPending Approval

**Kommentar [MK91]:** This is Approved.

**Kommentar [MK92]:** Which means SMS will be sent on every successful completion by a user. Please confirm.

**Kommentar [SK93]:** Yes, that is correct.

**Kommentar [MK94]:** The retry to configurable number of days happens only if the message submission to SMSC gateways fails. In case of successful submission to SMSC the WA system waits for the delivery notification and retry is not in WA system's control. In my opinion this statement needs modification, please discuss further with IMI.

**Kommentar [SK95]:** Done

**Kommentar [MK96]:** This is Approved.

**Kommentar [MK97]:** This is Approved.



	manually trigger Course Completion SMS (WA.GEN.COURSE.003)	<p>accidentally deleted the SMS.</p> <p>Exact mechanism for manual trigger is to be studied.</p> <p>The SMS module of MOTECH allows manual sending of SMS.</p>	<p>ng Approval</p>
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**Kommentar [MK100]:** This is Approved.

**Kommentar [MK98]:** Please clarify.

**Kommentar [SK99]:** This means that we can manually hit the Motech API to send SMS in-case needed.

#### 4.1.3 IVR Handling

Requirement Id	Description	Comments	Status
WA.GEN.IVR.001	WA course shall have simple DTMF options for easy handling and navigation of SWC.	Typical IVR menu shall have two DTMF options to take user inputs.	ApprovedPending Approval
WA.GEN.IVR.002	The IVR menu of WA service shall move ahead if the user does not provide any input twice or if the user provides any wrong input.	Consequently, after expiry of two loops of 12 seconds, the IVR shall deem to have got inputs to proceed.	ApprovedPending Approval
WA.GEN.IVR.003	The WA IVR menu tree shall realize the call flow as specified in section "Welcome Message and First Time Access Call Flow" of this document.	The call flow shall be normative part of this document.	ApprovedPending Approval
WA.GEN.IVR.004	The WA IVR menu tree shall realize the call flow as specified in section "Course and Bookmark Call Flow" of this document.	The call flow shall be normative part of this document.	ApprovedPending Approval
WA.GEN.IVR.005	The WA IVR menu tree shall realize the call flow as specified in section "Course Completion and Certification Call Flow" of this document.	The call flow shall be normative part of this document.	ApprovedPending Approval
WA.GEN.IVR.006	If there is service capping, the WA IVR menu tree shall play "end of usage" message if the usage for month is exhausted. If the message has already been played twice in a month, then the message shall not be played again and the call shall be disconnected.		ApprovedPending Approval

**Kommentar [MK101]:** This is Approved.

**Kommentar [MK102]:** This is Approved.

**Kommentar [MK103]:** This is Approved.

**Kommentar [MK104]:** This is Approved.

**Kommentar [MK105]:** This is Approved.

**Kommentar [MK106]:** This is Approved.

#### 4.1.4 Bookmark Handling

Requirement Id	Description	Comments	Status
WA.GEN.BKMK.001	MA service shall support course bookmarking whereby user can start or stop the course anytime without having to repeat the previously completed parts (as per last bookmarked position).		ApprovedPending Approval

**Kommentar [MK107]:** This is Approved.

WA.GEN.BKMK.002	The realization of bookmarking in WA service shall be realized whereby if the call drops during the call, the call is restarted from nearest bookmark location.  Exact bookmarking points shall be specified in the MOTECH-IVR interface document.		Approved Pending Approval
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**Kommentar [MK108]:** This is Approved.

## 4.1.5 Reporting

### 4.1.5.1 Users Access Levels

Requirement Id	Description	Comments	Status
WA.REP.ACCESS.001	The system would have two Access Types – “Admin” and “User”.		Approved Pending Approval
WA.REP.ACCESS.002	The system would have four types of access levels – “National”, “State”, “District”, “Block”		Approved Pending Approval
WA.REP.ACCESS.003	There should be only one Admin user at National level, one admin for each state, one admin for each district. There would be no Admin users at Block level.		Approved Pending Approval
WA.REP.ACCESS.004	There could be multiple users of Access Type “Users” at National, state, district or Block though ideally there should be some restriction on the numbers created at each level. <del>There could be a maximum of two users in Blocks, three in districts, four in states and five at national level.</del>		Pending Approval
WA.REP.ACCESS.005	The Admin users can create, update and manage users.		Approved Pending Approval
WA.REP.ACCESS.006	The application should have by default create one “National_Admin” user and one “XX_Admin” user for each State / UT denoted by XX.		Approved Pending Approval
WA.REP.ACCESS.007	1. National Admin user can create National non-Admin users. 2. State Admin users can create District Admin users and State / UT non-admin users. 3. District Admin users can create District non-admin users and Block users.		Approved Pending Approval
WA.REP.ACCESS.008	The Admin who creates a user has a right to edit the user. The right of edit would include deactivating the user, modifying details like mobile no and e-mails and resetting the password. The Admin user cannot update the password of the user he/she has created.		Pending Approval
WA.REP.ACCESS.009	Whenever a user is created it is always created with a default password. Whenever the admin user resets the password, the password is set to the default password. The default password is the mobile number of the		Approved Pending Approval

**Kommentar [MK109]:** This is Approved.

**Kommentar [MK110]:** This is Approved.

**Kommentar [MK111]:** This is Approved.

**Kommentar [MK112]:** Is it mandatory to limit the number of users?

**Kommentar [MK113]:** This is Approved.

**Kommentar [MK114]:** This is Approved.

**Kommentar [MK115]:** This is Approved.

**Kommentar [MK116]:** Admin user cannot update the password but can reset, let's mention that.

**Kommentar [SK117]:** It is mentioned across two lines.

	user.		
WA.REP.ACCESS.010	The application would not allow any user to login into the main application with the default password. Instead it will direct the user to a change password screen wherein the user can modify the password.		ApprovedPending Approval
WA.REP.ACCESS.011	The password that can be accepted by the application should be minimum of eight characters long with at least one character in Capital letter, one Numeric character and one special character.		ApprovedPending Approval
WA.REP.ACCESS.012	Any user can change password through his own login only.		ApprovedPending Approval

**Kommentar [MK118]:** This is Approved.

**Kommentar [MK119]:** This is Approved.

**Kommentar [MK120]:** This is Approved.

#### 4.1.5.2 User Management

Requirement Id	Description	Comments	Status
WA.REP.ACCESS.013	i. A National Admin user will be able to view all the users in the system. ii. A State / UT Admin user will be able to see all the users in the system for its own State / UT including users at district and block levels. iii. A District Admin user will be able to see all the users for its own district including users at block level.		ApprovedPending Approval
WA.REP.ACCESS.014	The user can edit only those users who it has created. Hence the application should display EDIT functionality in only those rows of users.		ApprovedPending Approval
WA.REP.ACCESS.015	The application can delete only those users who have never logged into the application.		ApprovedPending Approval
WA.REP.ACCESS.016	The application will have a search functionality wherein the application would display the users having details (for example username, phone no, email address) matching the words entered in the search text box.		ApprovedPending Approval
WA.REP.ACCESS.017	All columns except Serial Number should have sort feature – a toggle switch through which the user can sort the data of the entire table on the selected column in alternatively ascending or descending order.		ApprovedPending Approval
WA.REP.ACCESS.018	The table <u>showing the list of MIS users</u> should contain the following columns a) Serial No b) User Name c) Mobile No d) Email e) Access Type		ApprovedPending Approval

**Kommentar [MK121]:** This is Approved.

**Kommentar [MK122]:** This is Approved.

**Kommentar [MK123]:** This is Approved.

**Kommentar [MK124]:** This is Approved.

**Kommentar [MK125]:** This is Approved.

**Kommentar [MK126]:** This is Approved.

	<p>f) Access Level</p> <p>g) State</p> <p>h) District</p> <p>i) Block</p> <p>j) Last column having EDIT labels.</p>		
WA.REP.UI.001	<p>The admin user can create or edit an existing user using 'Create User' form. The form contains the following fields</p> <ol style="list-style-type: none"> <li>1. User Name – Textbox Control</li> <li>2. Select Access Type – Drop Down Control</li> <li>3. Select Access Level (Geography) – Drop Down Control</li> <li>4. Select State – Drop Down Control</li> <li>5. Select District – Drop Down Control</li> <li>6. Select Block – Drop Down Control</li> <li>7. Email – Text Box Control</li> <li>8. Mobile No – Text Box Control</li> <li>9. De-active - Checkbox</li> </ol> <p>In addition there should options to – “Create New User” and “Edit Existing User”.</p>		ApprovedPending Approval
WA.REP.UI.002	<p>The validation rules applicable are</p> <ol style="list-style-type: none"> <li>1. User Name to be unique and cannot contain any special character and space character</li> <li>2. One Valid Access Type (Admin/User) must be selected.</li> <li>3. One Valid Access Level (National/State/District/Block) to be selected</li> <li>4. One Valid State must be selected for State/District/Block Level User</li> <li>5. No Valid State can be selected for National user</li> <li>6. One Valid District must be selected for District/Block User</li> <li>7. No valid District can be selected for National/State User</li> <li>8. One Valid Block must be selected for Block User</li> <li>9. No valid Block can be selected for National/State/District user.</li> </ol>		ApprovedPending Approval
WA.REP.UI.003	<p>The Login Screen would have the username and password controls and a captcha with 5 characters. The screen should have provision for “Forget Password”.</p>		ApprovedPending Approval
WA.REP.UI.004	<p>The Forget password would have validation on the</p>		ApprovedPending

**Kommentar [MK127]:** This is Approved.

**Kommentar [MK128]:** This is Approved.

**Kommentar [MK129]:** This is Approved.

	User Name and Mobile number to reset the password.		ng Approval
WA.REP.UI.005	<p>There should be a menu "Change Password" in the Home Screen, clicking on which the Change Password Screen should open. This screen should have three textboxes.</p> <p>a) Last Password b) New Password c) Confirm New Password</p> <p>If the user has a default password associated with it and logs in with the default password then immediately after the login, this Change Password screen should open forcing the user to change the password. If the user has logged in with default password and clicks on the CANCEL button then the user is thrown out of the application and the Login Screen would appear.</p>		ApprovedPending Approval

**Kommentar [MK130]:** This is Approved.

**Kommentar [MK131]:** This is Approved.

#### 4.1.5.3 Report selection interface

Requirement Id	Description	Comments	Status
WA.REP.UI.006	<p>The application would have selection interface that will comprise the following</p> <ol style="list-style-type: none"> <li>1. Report Selection: This is a dropdown listing out all the available reports to choose from. The list of report names and the details of reports would be listed out in <b>Appendix B</b>.</li> <li>2. Location Selection: This could be combination of three drop-downs – State, District and Block.</li> <li>3. Period Selection: The selection could be combination of multiple controls allowing user to create reports on Annual / Quarter / Month / Till Date / Custom Date basis.</li> </ol>		ApprovedPending Approval
WA.REP.UI.007	<p>The location selection would depend on login user:</p> <ol style="list-style-type: none"> <li>a. All the location selections would be available for GOI user</li> <li>b. In case of a state-level user, its own state will be pre-populated in the state drop-down and no other state can be selected.</li> <li>c. In case of a district-level user, its own state and district will be pre-populated in the state drop-down and no other state or district can be selected.</li> <li>d. In case of a block-level user, its own state, district and block will be pre-populated in the state drop-down and no other state or district or block can be selected.</li> </ol>		ApprovedPending Approval
WA.REP.UI.008	The application may display the data in a tabular		ApprovedPending

**Kommentar [MK132]:** This is Approved.

**Kommentar [MK133]:** This is Approved.

	<p>format having the following features.</p> <ol style="list-style-type: none"> <li>1. The table design may be based on the templates provided for each report in this document. The templates provided are indicative and if any change is incorporated, then the same should be submitted to MDWS for approval before development of the report.</li> <li>2. The last row of most report may have TOTAL column wherein the total of all numerical column may be displayed. The calculated percentage column may not have a corresponding total.</li> <li>3. Each table should have a drill down feature. A state name when clicked should open the same report for that state – district wise. Similarly the district may be drill-down to blocks. There should be BACK button to provision the drill up feature as the user wants to retrace the drill down steps.</li> <li>4. The report by default should open with State/District/Block/Sub-Center names sorted in alphabetic ascending order.</li> <li>5. Each column except the Serial Number column should have provision for ordering / sorting by clicking on the column Name in a toggle switch design (ascending and descending) alternatively.</li> <li>6. The tabular data may be exported/downloaded in Excel / PDF Format.</li> </ol>		ng Approval
WA.REP.UI.009	<p>Date Range selection:</p> <p>The date range selection would be implemented differently for line-listing and aggregate reports.</p> <ol style="list-style-type: none"> <li>1. Line-listing reports are made available either at the end of the month or week. Either a month-picker or a week picker would be made available based on the report selection.</li> </ol> <p>The date pickers for aggregate reports should have the following provision to select the date range for the selected report.</p> <ol style="list-style-type: none"> <li>2. The user may select Annual, Quarter, Month, Custom-date and Till Date. <ol style="list-style-type: none"> <li>a. When the user selects Annual, the user may have provision for selecting “Financial Year”.</li> <li>b. When the user selects Quarter, the user may select one or more Quarters from Q1 (Apr-Jun), Q2 (Jul-Sep), Q3 (Oct-Dec), Q4 (Jan-Mar). This selection should be accompanied by selection of one Financial Year.</li> <li>c. When the user selects Month the user may select one or more months. This selection should be</li> </ol> </li> </ol>		ApprovedPendi ng Approval

**Kommentar [MK134]:** This is Approved.

**Kommentar [MK135]:** This is Approved.

	<p>accompanied by selection of one Financial Year.</p> <p>d. In Case of Custom Date, the user can select a 'from date' and 'to date'. This date selection can be across financial years.</p> <p>e. In case of Till Date, the user may select a financial year or may not select a financial year. In case of latter it would mean the reports to generate data for the entire period from the date of launch of the program for that state.</p> <p>3. When the user select the custom date the following validations should apply</p> <p>a. If a State / UT is selected the user cannot select a date earlier than the date on which the WASH Academy program is launched in the selected State / UT. If all states selected then the user cannot select a date earlier than the date on which the selected program was launched in the any of the states.</p> <p>b. The "Date From" value cannot be later than the "Date To" value.</p> <p>c. The "Date From" and "Date To" cannot be later than the current date.</p> <p>d. The select Date Range cannot be selected unless the "Select State" dropdown is selected with a valid report item. It is recommended that this control should be enabled off when the page loads and is enabled on only when the State / UT is selected.</p> <p>4. Similar validations must be applicable for selection of months. The user may not select a month for which no report can be generated.</p>		
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#### 4.1.5.4 Report selection interface

Requirement Id	Description	Comments	Status
WA.REP.EMAIL.001	The line-listing reports generated at Block and District levels would be immediately sent out to the corresponding users on their email IDs.		ApprovedPending Approval
WA.REP.EMAIL.002	The district-wise summary of the line-listing reports would be sent out to State level on their email IDs once the reports are generated.		ApprovedPending Approval

**Kommentar [MK136]:** This is Approved.

**Kommentar [MK137]:** This is Approved.

#### 4.1.6 Content Management and Upload

Requirement Id	Description	Comments	Status
WA.GEN.CONT.001	WA shall allow upload and modification of content files for the service.	The content files shall be managed by CMS which is part	ApprovedPending Approval

**Kommentar [MK138]:** This is Approved.

		of IVR and not part of MOTECH.	
WA.GEN.CONT.002	WA service shall support the course content to vary based on the needs of specific states. The number of chapters/lessons <u>and Answer key</u> shall be fixed for all states.		ApprovedPending Approval

**Kommentar [MK140]:** This is Approved. I have added Answer Key as well to this. Please confirm.

**Kommentar [SK141]:** Yes, th

**Kommentar [SK139]:** Yes, this is correct assertion.

## 4.2 Non-Functional Requirements

### 4.2.1 Scalability Requirements

Requirement Id	Description	Comments	Status
WA.GEN.SCALE.001	WA service shall be designed to handle maximum of 2,50,000 <del>registered</del> SWC users <u>pursuing the course</u> .		ApprovedPending Approval
WA.SCALE.002	WA service shall be designed to handle <u>393</u> simultaneous calls <u>during a peak hour</u> <del>of maximum of X SWC users</del> .		ApprovedPending Approval
WA.SCALE.003	The Congestion and Overload for incoming calls of WA shall be handled by the IVR system where some of the incoming calls may be rejected during overload.	There shall be no restrictions on SWC subscriber provisioning in WA.	ApprovedPending Approval

**Kommentar [MK142]:** This is Approved.

**Kommentar [MK143]:** This is Approved.

**Kommentar [MK144]:** This is Approved.

## 4.3 Call Flows

API spec between the IVR and MOTECH applications shall detail the interaction required between them to achieve the below call flows, SMS send and retry logic and hence specify the functionality requirement from each system (IVR and MOTECH) individually.

### 4.3.1 Welcome Message and First Time Access Call Flow



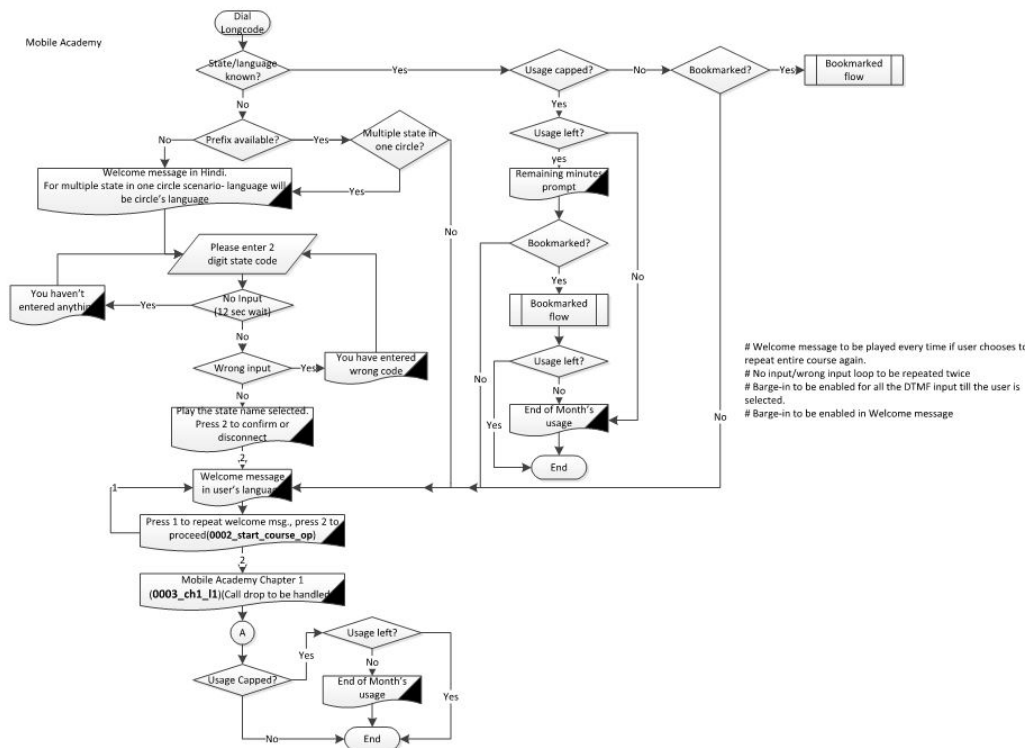


Figure 3: Wash Academy Welcome Message and First Time Access

Key points to note:

1. Welcome message has no explicit bookmarking. It shall be played again and again till the user has heard the welcome message completely and moved ahead.
2. Usage related messages shall be played only if the STATE has the usage as “capped”. If the usage is not “capped”, related messages shall not be conveyed.

#### 4.3.2 Course and Bookmark Call Flow

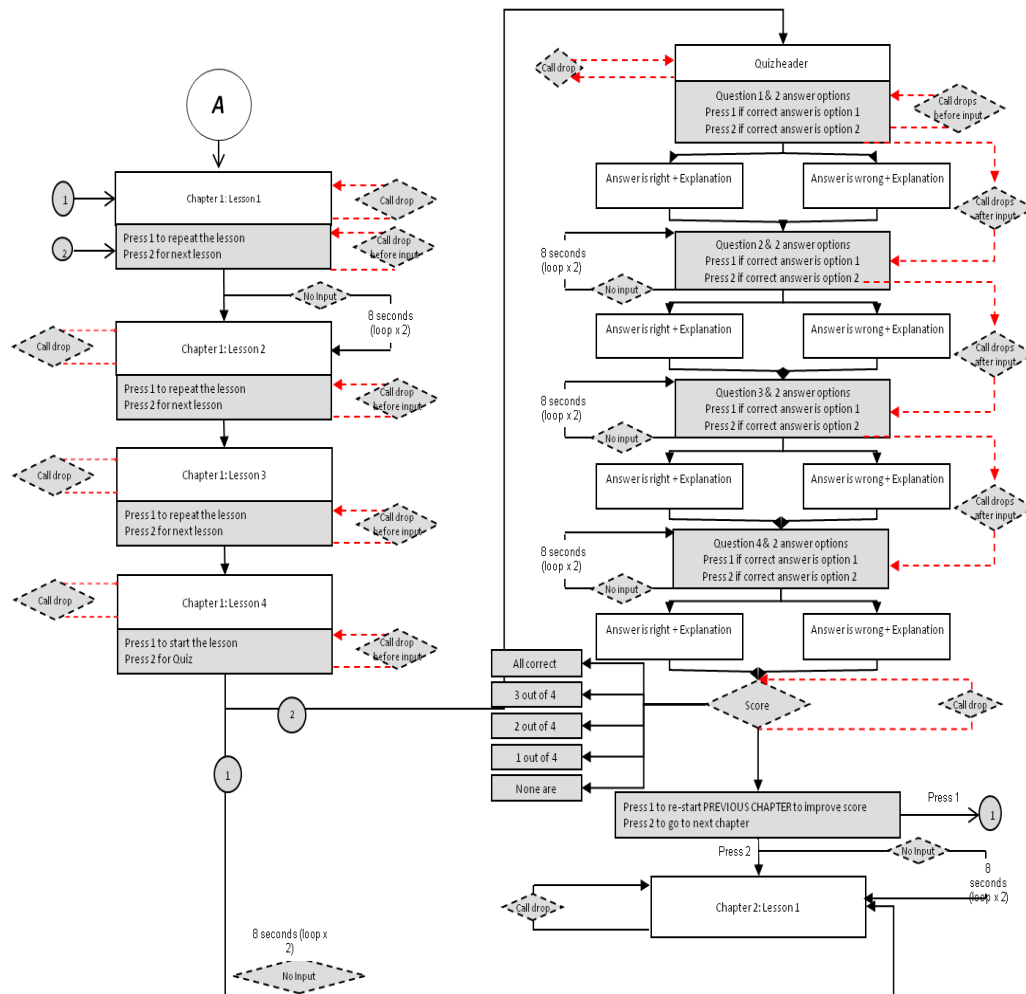
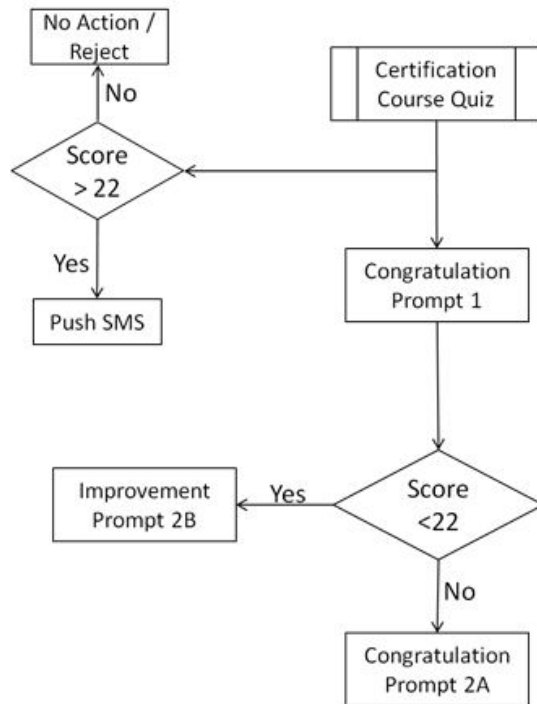


Figure 4: Course and Bookmark Call Flow

#### **4.3.3 Course Completion and Certification Call Flow**



**Prompt 1-**

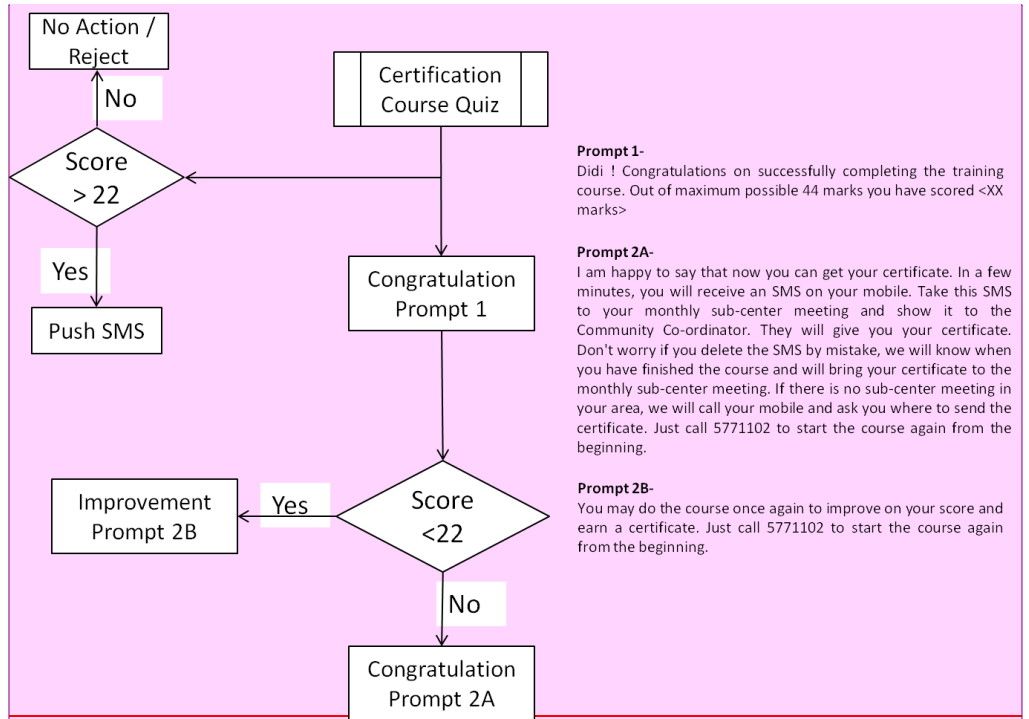
Didi ! Congratulations on successfully completing the training course. Out of maximum possible 44 marks you have scored <XX marks>

**Prompt 2A-**

I am happy to say that now you can get your certificate. In a few minutes, you will receive an SMS on your mobile. Take this SMS to your monthly sub-center meeting and show it to the Community Co-ordinator. They will give you your certificate. Don't worry if you delete the SMS by mistake, we will know when you have finished the course and will bring your certificate to the monthly sub-center meeting. If there is no sub-center meeting in your area, we will call your mobile and ask you where to send the certificate. Just call xxxxxxxx to start the course again from the beginning.

**Prompt 2B-**

You may do the course once again to improve on your score and earn a certificate. Just call 5771102 to start the course again from the beginning.



**Kommentar [MK145]:** This flow mentions shortcode "5771102" which is not relevant in this case. Please see.

Figure 5: Course Completion and Certification Call Flow

#### 4.4 Call Flows

API spec between the IVR and MOTECH applications shall detail the interaction required between them to achieve the below call flows, SMS send and retry logic and hence specify the functionality requirement from each system (IVR and MOTECH) individually.

## 5 Appendix A: Input Parameter Elements and Definitions

### 5.1 Location Data

#### 5.1.1 District

#	Data Field	Description	Data Format	Max Size	Mandatory /Optional	Validations	Default Value	Remarks
1	DCode		int		M	Not null		
3	Name_G		nvarchar	100	M	Not null		Regional language
4	Name_E		nvarchar	100	M	Not null		English Name
5	StateID		int		M	Not null		

#### 5.1.2 ~~Health~~Block

DCode should not be used.

#	Data Field	Description	Data Format	Max Size	Mandatory /Optional	Validations	Default Value	Remarks
1	BID		int		M	Not null		
2	Name_E		varchar	35	M	Not null		English Name
3	Name_G		nvarchar	50	M	Not null		Regional Language
4	HQ		nvarchar	50	M	Not null		
5	DCode		int		M	Not null		
6	TCode		varchar	6	M	Not null		

#### 5.1.3 Panchayat

#	Data Field	Description	Data Format	Max Size	Mandatory /Optional	Validations	Default Value	Remarks
1	VCode		int		M	Not null		
2	Name_E		varchar	50	M	Not null		English Name
3	Name_G		nvarchar	50	M	Not null		Regional language name
4	TCode		varchar	7	M	Not null		
5	DCode		int		M	Not null		

### 5.2 Swachchagrahi Data

#### 5.2.1 Swachchagrahi Id

- Swachchagrahi ID is a running number generated by source system which is unique within a Panchayat.
- Swachchagrahi ID in a Panchayat will be in the range of 1 – 10.

- Combination of Panchayat ID and Swachchagrahi ID is unique identifier for a Swachchagrahi.

### 5.3 Source Data

TBD

### 5.4 Configuration Parameters

The following are key configuration parameters used by NMS system:

- Capping information (refer WA.ACCESS.003, WA.ACCESS.004)
- Configurable # of days of retry for course SMS **delivery**
- **Nation**
  - Default location for anonymous users
  - Default language used by a service in whole nation
- **State Specific Parameters:**
  - Language Mapping to group of districts of a state (location-language code)
  - State specific content files
  - State-circle-district-Location\_language mapping
- **Reports:**
  - FTP information for saving reports on FTP server

**Kommentar [MK146]:** This configuration is applicable if submission to SMSC has failed. Please clarify from IMI.

**Kommentar [SK147]:** Responded above.

## 6 Appendix B: Wash Academy Reporting Types and Parameters

Name of Report	Fields
WASH Academy Cumulative Summary Report	<p>This is a cumulative aggregate report and will not allow selection of start date. The report will have the following fields:</p> <ol style="list-style-type: none"> <li>1. Serial Number</li> <li>2. State</li> <li>3. No of Registered swachchagrahis</li> <li>4. No of swachchagrahis Started Course</li> <li>5. No of swachchagrahis Not Started Course</li> <li>6. No of swachchagrahis Successfully Completed the Course</li> <li>7. No of swachchagrahis who failed the course</li> <li>8. % Not Started Course</li> <li>9. % Successfully Completed</li> <li>10. % Failed the course</li> </ol>
WASH Academy Performance Report	<p>This is an aggregate report. The report displays the columns in the following sequence:</p> <ol style="list-style-type: none"> <li>1. Serial Number</li> <li>2. State</li> <li>3. No of swachchagrahis Started Course</li> <li>4. No of swachchagrahis Pursuing Course</li> <li>5. No of swachchagrahis Not Pursuing Course</li> <li>6. No of swachchagrahis Successfully Completed the Course</li> <li>7. No of swachchagrahis who failed the course</li> </ol>
WASH Academy Subscriber Report	<p>This is an aggregate report. The report displays the columns in the following sequence:</p> <ol style="list-style-type: none"> <li>1. Serial Number</li> <li>2. State</li> <li>3. No of swachchagrahis Registered but Not Completed (Period Start)</li> <li>4. No of Records Received Through Web Service</li> <li>5. No of Records Rejected</li> <li>6. No of Records Added</li> <li>7. No of Successfully First Completions the Course</li> <li>8. No of Registered but Not Completed (Period End)</li> </ol>
WASH Academy Anonymous Users summary report	<p>This is an aggregate report. The report displays the columns in the following sequence:</p> <ol style="list-style-type: none"> <li>1. Serial Number</li> <li>2. Circle</li> <li>3. No of anonymous users Started Course</li> </ol>



	<p>4. No of anonymous users Pursuing Course</p> <p>5. No of anonymous users Not Pursuing Course</p> <p>6. No of anonymous users Successfully Completed the Course</p> <p>7. No of anonymous users who failed the course</p>
WASH Academy Completion Line-Listing Report	<p>This is excel based cumulative line-listing report generated at end of every month. The report displays the columns in the following sequence:</p> <ol style="list-style-type: none"> <li>1. Mobile Number</li> <li>2. State Name</li> <li>3. District Name</li> <li>4. Block</li> <li>5. Panchayat</li> <li>6. Swachchagrahi Name</li> <li>7. Swachchagrahi ID</li> <li>8. Swachchagrahi Creation date</li> <li>9. Course Start Date (New Column)</li> <li>10. First Completion Date</li> <li>11. SMS Sent Notification</li> </ol>
WASH Academy Circle-wise Anonymous Users Line-Listing Report	<p>This is excel based cumulative line-listing report generated at end of every month. The report displays the columns in the following sequence:</p> <ol style="list-style-type: none"> <li>1. Serial Number</li> <li>2. Id</li> <li>3. Mobile Number</li> <li>4. Operator</li> <li>5. Circle</li> <li>6. Course Start</li> <li>7. Course First Successful End</li> <li>8. Last Call End Date</li> <li>9. Last Call End Time</li> <li>10. Total Minutes Used</li> <li>11. SMS Sent</li> <li>12. SMS Reference Number</li> <li>13. No. Of Attempts</li> </ol>
WASH Academy Inactive Users Line-Listing Report	<p>This is excel based cumulative line-listing report generated at end of every month. The report displays the columns in the following sequence:</p> <ol style="list-style-type: none"> <li>1. Mobile Number</li> <li>2. State Name</li> <li>3. District Name</li> <li>4. Block</li> <li>5. Panchayat</li> </ol>

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	<div>6. Swachchagrahi Name</div> <div>7. Swachchagrahi ID</div> <div>8. Swachchagrahi Creation date</div>
WASH Academy Rejected Line-Listing Report	<div>This is excel based weekly line-listing report. The report displays the columns in the following sequence:</div> <div><div>1. State Name</div><div>2. District Name</div><div>3. Block</div><div>4. Panchayat</div><div>5. Swachchagrahi ID</div><div>6. Swachchagrahi Name</div><div>7. Swachchagrahi Mobile Number</div><div>8. Status</div><div>9. Reason for Rejection</div></div>

## 7 Appendix D: States, Union Territory and Circles in India

The information in this appendix is for reference. Exact names of various parameters are not specified in this section and may vary in actual implementation.

### 7.1 States and Union Territory of India

(Source: [http://en.wikipedia.org/wiki/States\\_and\\_union\\_territories\\_of\\_India](http://en.wikipedia.org/wiki/States_and_union_territories_of_India))

#### 7.1.1 List of States

#	Name	Official language(s)
1	Andhra Pradesh	Telugu
2	Arunachal Pradesh	English
3	Assam	Assamese; Regional: Bodo, Bengali
4	Bihar	Hindi, Bhojpuri, Magadhi, Maithili, Urdu
5	Chhattisgarh	Chattisgarhi, Hindi
6	Goa	Konkani
7	Gujarat	Gujarati
8	Haryana	Hindi, Haryanvi (regional), Punjabi
9	Himachal Pradesh	Hindi, Pahari (regional)
10	Jammu and Kashmir	Dogri, Kashmiri, Ladakhi, Urdu[5]
11	Jharkhand	Hindi
12	Karnataka	Kannada
13	Kerala	Malayalam
14	Madhya Pradesh	Hindi
15	Maharashtra	Marathi

#	Name	Official language(s)
16	Manipur	Manipuri
17	Meghalaya	English, Garo, Hindi, Khasi, Pnar,
18	Mizoram	Mizo
19	Nagaland	English
20	Odisha	Odia
21	Punjab	Punjabi
22	Rajasthan	Hindi, Rajasthani
23	Sikkim	Nepali, Bhutia, Gurung, Lepcha, Limbu, Manggar, Newari, Sherpa, Sunwar, Tamang
24	Tamil Nadu	Tamil
25	Telangana	Telugu, Urdu
26	Tripura	Bengali, Tripuri
27	Uttar Pradesh	Hindi, Urdu
28	Uttarakhand	Hindi, Sanskrit
29	West Bengal	Bengali, English, Nepali[9]

### 7.1.2 List of Union Territory

#	Name	Official language(s)	Mapped State
1	A&N Islands	English, Hindi	West Bengal
2	Chandigarh	English, Hindi, Punjabi	Punjab
3	Dadra & Nagar Haveli	English, Gujarati, Hindi, Marathi	Gujarat

#	Name	Official language(s)	Mapped State
4	Daman & Diu	English, Gujarati, Hindi, Marathi	Gujarat
5	Lakshadweep	English, Malayalam	Kerala
6	National Capital Territory of India	English, Hindi, Punjabi, Urdu	Delhi (NCT)
7	Puducherry	French & Tamil	Tamil Nadu

## 7.2 Circle Information

22 telecom circles below span all states and UT of India. (Source: [www.trai.gov.in](http://www.trai.gov.in))

Telecom circle	State/UT
Andhra Pradesh	<ul style="list-style-type: none"> <li>Andhra Pradesh</li> <li>Telangana</li> </ul>
Assam	<ul style="list-style-type: none"> <li>Assam</li> </ul>
Bihar & Jharkhand	<ul style="list-style-type: none"> <li>Bihar</li> <li>Jharkhand</li> </ul>
Delhi	<ul style="list-style-type: none"> <li>Delhi (NCT) (includes Local Areas served by Delhi, Ghaziabad, Faridabad, Noida, and Gurgaon Telephone Exchanges)</li> </ul>
Gujarat & Daman & Diu	<ul style="list-style-type: none"> <li>Gujarat (state)</li> <li>Daman &amp; Diu (UT)</li> <li>Dadra &amp; Nagar Haveli (UT)</li> </ul>
Haryana	<ul style="list-style-type: none"> <li>Haryana</li> </ul>
Himachal Pradesh	<ul style="list-style-type: none"> <li>Himachal Pradesh</li> </ul>
Jammu and Kashmir	<ul style="list-style-type: none"> <li>Jammu and Kashmir</li> </ul>
Karnataka	<ul style="list-style-type: none"> <li>Karnataka</li> </ul>
Kerala & Lakshadweep	<ul style="list-style-type: none"> <li>Kerala</li> <li>Lakshadweep (UT)</li> </ul>

Telecom circle	State/UT
Kolkata	<ul style="list-style-type: none"> <li>· Kolkata</li> </ul>
Madhya Pradesh & Chhattisgarh	<ul style="list-style-type: none"> <li>· Madhya Pradesh</li> <li>· Chhattisgarh</li> </ul>
Maharashtra & Goa (excluding Mumbai )	<ul style="list-style-type: none"> <li>· Maharashtra (excluding Mumbai )</li> <li>· Goa</li> </ul>
Mumbai	<ul style="list-style-type: none"> <li>· Mumbai</li> </ul>
North East	<ul style="list-style-type: none"> <li>· Arunachal Pradesh,</li> <li>· Manipur,</li> <li>· Meghalaya,</li> <li>· Mizoram,</li> <li>· Nagaland,</li> <li>· Tripura</li> </ul>
Orissa	<ul style="list-style-type: none"> <li>· Orissa</li> </ul>
Punjab	<ul style="list-style-type: none"> <li>· Punjab</li> <li>· Chandigarh (UT)</li> <li>· Mohali</li> <li>· Panchkula</li> </ul>
Rajasthan	<ul style="list-style-type: none"> <li>· Rajasthan</li> </ul>
Tamil Nadu	<ul style="list-style-type: none"> <li>· Tamil Nadu</li> <li>· Puducherry (UT)</li> </ul>
Uttar Pradesh(East)	<ul style="list-style-type: none"> <li>· Uttar Pradesh(East)</li> </ul>
Uttar Pradesh(West) & Uttarakhand	<ul style="list-style-type: none"> <li>· Uttar Pradesh(West)</li> <li>· Uttarakhand</li> </ul>
West Bengal(excluding Kolkata)	<ul style="list-style-type: none"> <li>· West Bengal(excluding Kolkata)</li> <li>· Sikkim (state)</li> <li>· Andaman &amp; Nicobar Islands (UT)</li> </ul>