

Request for Proposal



SELECTION OF SERVICE PROVIDER FOR
DEVELOPMENT AND IMPLEMENTATION OF
AUTOMATION SYSTEM OF MINOR IRRIGATION
PROJECTS, DOWR, ODISHA

RFP No. OCAC-SEGP-SPD-0051-2021-22032 dated 10.05.2022



Volume II
Terms of Reference

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Abbreviations

AA	Administrative Approval
AE	Assistant Engineer
ALF	Area Level Federation
ANSI	American National Standards Institute
BOQ	Bill of quantity
CA	Certified Authority
CERT-In	Indian Computer Emergency Response Team
CLF	Community Level Federation
CO	Community Organizer
DAP	Directory Access Protocol
DDD	Detailed Design Document
DNS	Domain name system
DUDA	DISTRICT URBAN DEVELOPMENT AGENCY
E&IT	Electronics and Information Technology
eMB	E-Measurement Book
EO	Executive Officer
EOI	Expression of Interest
ESI	Employees' State Insurance Scheme
FAQ	Frequently Asked Question
FRS	Functional requirement specification
GIGW	Guidelines for Indian Government Websites
GuDApps	Guidelines for Development of eGovernance Applications
IA	Implementing Agency
IEEE	Institute of Electrical and Electronics Engineers
iFIX	Financial Information Exchange Bus
iFMS	Integrated Finance Management System
IT	Information Technology
IP	Implementing Partner

JE	Joint Engineer
L1	Least cost
MIS	Management Information System
MPR	Monthly Progress Report
OCAC	Odisha Computer Application Centre
OPWD	Odisha Public Works Department
ORSAC	Odisha Space Applications Centre
OSDC	Odisha State data Centre
PO	Purchase Order
QA	Quality Assurance
RDBMS	Relational Database Management System
RFP	Request For Proposal
RWD	Responsive Web Design
SeMT	State e-Governance Mission Team
SFTP	Secure File Transfer Protocol
SMS	Short Message Services
SP	Service Provider
SRS	Software requirement Specification Document
SSL	Secure Socket Layer
SSO	Single Sign-on
TCP	Transmission Control Protocol
TS	Technical Specification
UAT	User Acceptance Testing
UDID	Unique Disability ID
ULB	Urban Local Body
URS	User Requirement Specification
WCR	Work Completion Report
WLC	Ward Level Committee

1 Background

1.1 About the Project

Minor irrigation projects are executed by the Minor Irrigation Organization under Water Resource department of Odisha government. It becomes difficult to keep track and know about all works and their status. Currently there is no information technology interface to keep a record of all the projects. So, its time taking and tedious to keep tracking of projects and their status. When there is a requirement for different kinds of reports its very difficult to collect the information in different levels or in divisions. It takes a long time to make a different kind of reports.

As during the project, the information's are needed from different departments for this system has a scope of integration with other applications and fetch information as per requirement. As API based, department can get information from other applications like PROMIS, WAMIS, Mo Sarkar, GIS based data and there should be a provision to share data with upcoming water ERP System of WR Odisha.

1.2 About the Department

The Minor Irrigation Organization (Erstwhile Rural Engineering Organization, i.e., R.E.O.) was created in the year 1962 under Rural Development Department. On abolition of R.D. Department on 15.06.1980, Minor Irrigation (M.I.) Organization was brought over under Irrigation & Power Department. Again, it came under R.D. Department from 24.03.1990. Finally, since 1996, it is under Water Resources (W.R.) Department. Minor Irrigation (Flow) takes care of construction, maintenance and management of Irrigation Projects of Cultural Command Area (CCA) ranging between 40 ha. to 2000 ha. utilizing the surface flow. The total available CCA that can be irrigated through M.I. (Flow) is about 1.0 million ha., against which 63.1 % has been harnessed so far with the inclusion of MEGA LIFT projects.

1.3 Objective

The primary objective of the 'Automation System of Minor Irrigation Project of Water Resources Department' would be to provide an End-to-End process flow based automated system for all minor irrigation projects. A web-based application package needs to be developed for Minor Irrigation Organization of Water Resources which would serve as a backbone of information reporting and will provide solution to track and monitor the project process, financial data, historical information and other relevant content.

To manage each project and keep its information of old projects "Minor Irrigation" requires an automatic web application system to ease the workflow and keep all information related to the project in a structured manner. In this new application, the department and departmental authorities can easily initiate the work and execute it.

2 Scope of work

Scope of work of this project includes software development, testing and QA, training of master trainers, managing database & application services for non-interrupted operation and providing change management & maintenance support service during pilot & rollout of Minor Irrigation Automation system. This term of reference contains an indicative top-level requirement of envisaged Minor Irrigation Automation system for reference. The software vendor is desired to deliver a comprehensive bespoke system as per the signed requirement specification for implementation. Accordingly, the scope of services will encompass the following:

- a) Preparation of SRS, Detailed Design and other Technical Artifacts
- b) Application Development
- c) Third party tools and licenses
- d) Software Testing
- e) Support during User Acceptance Testing
- f) Support during Security Audit and Quality Assurance
- g) Data Porting
- h) Training of Master Trainers
- i) Operation & Maintenance Services
- j) Change Request Management
- k) Project Closure

2.1 Preparation of SRS, Detailed Design and other Technical Artifacts

The Service Provider shall perform a detailed assessment of the service and solution requirements as per the User Requirement Specification (URS) and Functional Requirement Specification (FRS) provided by the department. Based on the assessment, service provider shall develop & finalize the Detailed Design Document (DDD) and the System Requirement Specifications (SRS). While doing so, it is suggested that the SP should:

- a) Consult with Water resource department and OCAC officials
- b) Engage some domain experts during the study
- c) Follow standardized template for requirements capturing
- d) Maintain traceability matrix from SRS stage for the entire implementation

Besides SRS and DDD, the service provider shall prepare other necessary technical artifacts at each phase of software development life cycle. Version management with release note of all technical artifacts is mandatory. IEEE standard must be followed while preparing these technical documentations.

2.2 Application Development

The service provider shall identify, design and develop components / functionalities that are required to address the application requirements according to approved SRS and DDD. The service provider shall consider following activities:

2.2.1 Development of Minor Irrigation Automation system.

The service provider will be responsible for development of Minor Irrigation Automation system as per top level requirement given in these terms of reference. The software development team should operate from their office premises.

2.2.2 Development of Mobile Apps

The Automation System of Minor Irrigation Projects for Water Resources Department, Odisha will have a mobile application for field officers where they can update the work process on daily basis which the geo-tagged photos will be uploaded through Mobile Application. Once updated, information will be sync to web application and that will be reflected to their concern higher authorities as well.

The mobile application will have the following features:

- Work Process Section
- Monitoring
- Photo Upload (Pre-Work, In-Progress, Close Work)
- Real-Time Update Notification

2.2.3 Integration

The service provider is responsible to integrate Minor Irrigation Automation system with external systems.

- a) PROMIS
- b) WAMIS
- c) GIS Based Asset Management System
- d) Farmers Database of water resource department.
- e) Enquiry
- f) IFMS

2.2.4 Web Design Considerations

The application should be able to support all common browsers (like Internet explorer, Mozilla, Chrome, Safari etc). The Service Provider shall strictly follow Responsive Web Design (RWD) approach for developing user interfaces. At least labels used in the forms, reports etc. in the application shall be bilingual and be available in English and Odia following UNICODE standard.

2.2.5 Notification Facility

Proposed application should issue SMS alerts to the respective users for time bound actions and escalation mechanisms for non-attended activities. The service provider will integrate the relevant modules with messaging gateway provided by OCAC for inbound or outbound SMS for different functionalities. application should support e-mail and popular messaging app integration.

2.3 Software Testing

Testing activities for application will be carried out in iterative manner for each of the module as the service provider keep on developing. Testing activities must be carried out on the testing environment of the server provided by the service provider.

The service provider shall submit the test plan to department/OCAC earlier for testing the developed application (module) along with traceability matrix. The test plan should be in line with the functional requirement specifications. The service provider shall prepare test cases based on duly approved test plan the testing procedures should be carried out for each unit, module and for the system as well. Test reports with defect list should be submitted to department for reference. The service provider shall deliver the tested and fault rectified application to department and deploy the same on the staging server. Staging server shall be provided by the OCAC.

2.4 Support during User Acceptance Testing

User Acceptance Testing will be carried out on the staging server. The service provider shall be responsible to deploy the application on staging server and facilitate Project Management Committee in department to conduct User Acceptance Testing. Selected users from department will carry out the UAT of the developed modules. The service provider will provide necessary training to the selected users for carrying out the UAT. All feedback with respect to functionalities, performance, user experience and reported bugs must be addressed by the service provider concurrently. The department will issue user acceptance certificate to the service provider for further actions.

2.5 Support during Security Audit and Quality Assurance

The service provider shall carry out following activities relating to Security Audit of application.

- a) The service provider needs to ensure that the solution is in compliance with the CERT-In Security Policy and Guidelines.
- b) The service provider shall appoint CERT-In empaneled auditor who shall be responsible for performing the Security Audit of the solution.
- c) The third-party agency shall conduct audit on minimum below mentioned parameters.
- d) The cost of audit & rectification of non-compliances shall be borne by the service provider. As per the quantity mentioned in the commercial bid
- e) Coordination with the CERT-In empaneled firm for security audit and obtain the compliance certificate.

- f) Carryout security audit before go-live of application and obtain the safe-to-host certification
- g) Carryout the periodic audit & certification as and when it is required as per the OSDC policy.

2.6 Training to Master Trainer

Train the Trainer model is adopted for imparting training for application. The Service provider shall be responsible for imparting training to the master trainers on developed modules. The resource person of the service provider responsible for training, shall work under the supervision of Water resource department officials.

2.6.1 Training Content

- a) The Service provider shall ensure that the training content is relevant to the target trainees depending upon the role played by them in the system. There should be separate training materials for different level of users. The training material should be illustrative enough for easy understanding of the user and smooth adaptability of the software.
- b) The Service provider shall submit the training content to department for approval. It shall be submitted at least 20 days in advance before the conduction of the training. The department will review and provide comments to the service provider on the training content within 7 days of the submission of draft training content. The Service provider shall incorporate and implement changes suggested by department in training delivery and content.
- c) The service provider should prepare pre-training content separately. These pre-training content should be circulated among the trainees 7 days prior to the training program. The purpose of such pre-training content is to make the trainees prepared for receiving the training.
- d) Providing hard copies of training material to participants shall not be responsibility of the software vendor.

2.6.2 Training Calendar

Objective of the training is to ensure proper adaptation and use of the software by the end users. To meet this objective, the service provider shall prepare training calendar for each phase of software development in consultation with the department. The software vendor shall set up training environment for hands on practice on the modules of the application.

2.6.3 Training Venue

Training of the master trainers shall take place virtually through MS Teams/ Zoom/Google Meet. In case of physical training requirement, the training shall be conducted centrally at Bhubaneswar and Cost of travelling of trainees for attending the training will be borne by the department. The department shall provide the venue including furniture, Internet, projector, work station essential for the training.

2.6.4 Training Participants

- a) Indicative number of master trainers to be trained is 100 (One hundred).
- b) Department shall identify the participants (master trainers) for the training.
- c) Each batch should not have more than 20 (twenty) participants.

2.6.5 Post-Training Assessment

- a) The service provider needs to submit training completion report at end of training of each phase separately.

2.6.6 Language for Delivery of Training

The language of training delivery shall be in English and Odia.

2.7 Online Help/Reference with Search Option

- a) It is also proposed that the training contents / user manuals be made available to users in downloadable (PDF) format so that the users may refer / download it for their own personal reference as and when needed.
- b) It is envisaged that any user will be able to search and read the directions / information for the right content. On entering the key words for search criteria, the system should pull out and display the links to the content as mapped.
- c) The system should support dynamic search facility i.e. as soon as the key words are changed; a new set of content links with page shall be displayed to the user.

2.8 Deployment and Configuration

It is also the responsibility of the service provider to deploy the developed modules on the staging server for testing by the state level and division level users. The service provider should comply with all the feedback reported by the selected users of department. Once the module gets cleared and accepted by selected user groups it should be deployed on training and production environment.

- a) The Service Provider's team should submit deployment plan in advance and get it approved by the department/ocac.
- b) Each deployment should carry a release note for the users.

2.9 Application Roll out

On successful UAT the application will be rolled out across the state.

2.10 Operation and Maintenance

2.10.1 Application Support

Application support includes, but not limited to, production monitoring, troubleshooting and addressing the functionality, availability and performance issues, implementing the system change requests etc. The Service provider shall keep the application software in good working order; perform changes and upgrades to applications as requested by department. Key activities to be performed by the service provider in the application support phase are as follows:

- a) Enhancement of Analytical MIS report as per the requirement
- b) Database query report management on emergency
- c) Optimization of the already developed reports
- d) Tuning of transactions
- e) User & access management
- f) The service provider shall ensure compliance to SLAs as indicated in this RFP and any upgrades / major changes to the software shall be accordingly planned by the service provider ensuring the SLA requirements are met at no additional cost to the department.

2.10.2 Software Maintenance

- a) The service provider shall provide support through Telephone / Email as required as per the service window defined in the RFP
- b) The service provider shall address all the errors / bugs / gaps in the functionality in the solution implemented by the service provider (vis-à-vis the FRS and SRS signed off) at no additional cost during the support phase.
- c) Any changes/upgrades to the software performed during the support phase shall subject to the comprehensive and integrated testing by the service provider to ensure that the changes implemented in the system meets the specified requirements and doesn't impact any other function of the system.
- d) Tuning of products / applications, databases, third party software's and any other components provided as part of the solution software including reconfiguration of the system in the event of any hardware/ network failures/ if any hardware/ network components have to be replaced, shall be the responsibility of the service provider.
- e) Issue log for the errors and bugs identified in the solution and any change done in the solution shall be maintained by the service provider and periodically submitted to the department.

2.10.3 System/Infra Support

2.10.3.1 Database Administration

- a) Regular monitoring & management of all the applications installed / re-installed and databases hosted as and when it required for the project

- b) Installation & configurations the RDBMS software
- c) Database administration, optimization and trouble Shooting
- d) Database & file back-up as per the policy of OSDC
- e) Application Load balancing and Database Clustering
- f) Perform Database, event & system log analysis

2.10.3.2 Security Administration

- a) Regular analysis of events and logs generated
- b) User ID and group management services

2.10.3.3 Backup and Restore Management

- a) Preparation of backup plan
- b) Backup of operating system, database and application as per OSDC policy
- c) Monitoring and enhancement of the performance of scheduled backups

2.10.3.4 System/Network Administration

- a) Network configuration
- b) Patch update
- c) System Administration and Trouble Shooting
- d) Application & System Software Administration (including performance tuning)
- e) Application and database level performance tuning

2.10.4 Change Request Management

It may be so required to customize the application to accommodate revise guidelines and betterment of the application evolving time and again. Any such customization will be considered as change request.

- a) Major enhancement to the existing modules which may affect the application process & database (To be agreed by technical committee)
- b) Development of new Module/Form/Report
- c) Any changes in the Workflow/data flow or Core application framework
- d) Any new integration with other system
- e) System Administration

Change requests from the stakeholders of MI Automation shall be collected on regular basis. Change requests collected shall be discussed in the PMC, considered for implementation on priority basis and assigned to the service provider to work upon. The service provider should adapt following procedure to implement assigned change requests into application.

- a) To understand change requests and to analyze impact of desired change on existing modules.
- b) To prepare effort estimate on the basis of overall-person-days to bring desired changes in the application. The estimate of effort to implement the change requests must be approved by PMC before the vendor takes it up for implementation.
- c) To revise requirement specifications, design document prepared earlier including traceability matrices, test plan, test cases and other related technical artifacts to incorporate desired change.
- d) To revise the existing source code in related modules according to the revised design document, conduct test with test cases and recording of test results.
- e) To revise all related manuals and preparing release notes.
- f) To redeploy upgraded version of application onto the staging, training and production environment.
- g) To close change-request-ticket after receiving note of satisfaction from the PMC

2.10.5 Project Management

The envisioned project is a multi-disciplinary initiative. An effective Project Management Plan and commitment to adhere to it is a mandatory requirement. The project plan should also include the resource, task and time plan for the entire duration of the project.

The service provider shall employ best practices in project management methodology to ensure that the envisioned project components are developed and implemented within the defined time period. A copy of the project management Plan (both soft and hard copy) shall be handed over to water resource department to keep track of the progress of the project.

2.11 Hand holding support:

One Technical resource to be deployed on the client premises for a period of one year to provide hand holding technical support to the concerned officials or end users.

2.12 Project Closure

The last month of the project is considered as Project Closure period. Department will not assign any new tasks or change request during the project closure period. During the project closure, the service provider shall clear all pending work as follows.

- a) To ensure that all the feedback, issues, complaints, change requests received from the users are resolved to the satisfaction of department.
- b) To ensure that all technical artifacts delivered meets the quality standard and comply with the feedback of the third-party quality auditor.
- c) To ensure that the final version of all the artifacts including source code of the application is handed over to water resource department technical team.
- d) To ensure proper transfer of knowledge to the department technical team.

2.13 Project Documentation

The service provider shall share below list of documents to OCAC during the project contract period.

Milestone	Documentation
Preparation of SRS, Detailed Design and other technical artifacts	<ul style="list-style-type: none"> – System Requirement Specifications (SRS) – Detailed Design Document (DDD)
Testing	<ul style="list-style-type: none"> – Test Plan, – Test Cases, – Test Results, – Defect List, – Traceability Matrices
Training	<ul style="list-style-type: none"> – Training calendar – Training Manual – Operation Manual, – User Manual
Exit Management	<ul style="list-style-type: none"> – Programme Source Code, – Programmers Manual, – Installation Manual,

2.14 Project Timeline:

Sl#	Activity	Tentative Deliverables	Timeline
a)	System Study & Prototype Design	<ul style="list-style-type: none"> – Detailed Team Structure with team members – Point of Contact – FSR/SRS Document – Screen prototypes 	T+4 Weeks
b)	Design, Development & Implementation	<ul style="list-style-type: none"> – Source Code – Test Plans & Test Cases – Operation Manual – FAQs – Load Testing report – Hosting in staging environment 	T+ 16 Weeks
c)	UAT, Training & Go live	<ul style="list-style-type: none"> – Preparation Test Cases – UAT certificate – Training to users and provide training completion report. – Movement of application from Staging to Production environment – Safe to host certificate issued by Cert-in empaneled firm 	T+ 20 Weeks

Sl#	Activity	Tentative Deliverables	Timeline
d)	Operation & Maintenance	– Issue Logs – Quarterly Activities report	Five years from the date of Go live
e)	Hand holding support	– Monthly Attendance Sheet	One year from the date of Go live

2.15 Service Level & Penalty

Sl#	Major Area	Parameter	Requirements	Penalty
a)	Customization & Implementation	Major milestone during development and implementation as per project timeline.	As per project timeline	Rs. 500/- per day delay
b)	Response time for bug fixing	Time taken (after the request has been informed) to acknowledge problem	Within 24 hours from the time the bug is reported.	Rs. 100/- per hour delay
c)	Resolution Time (Only for Bug fixing)	Time taken by the service provider to fix the problem	Problems with severity within 48 hours from the time of reporting.	Rs. 500/- per hour delay
e)	IT Helpdesk	Start of service	As per project timeline	Rs. 2,000/- per day delay

2.16 Bill of Material & Quantity

Sl#	Category	Items	Qty
a)	Study, Design, Development / Customization, Testing, Deployment / Implementation	Application development as per requirement mentioned under clause no. 3 of this document.	5 months
b)	Operation & Maintenance of the application	Application Support, Software Maintenance, System Support, etc mentioned in this document.	5 Years
c)	Handholding support executive Deployment	Deployment of Manpower as specified	1 Year
d)	SSI certificate	As per the scope	5 years
e)	Cyber Security Audit	As per the scope	10 Nos

2.17 Payment Terms

Sl#	Category	Payment Terms	
a)	Design, Development and Implementation	<ul style="list-style-type: none"> – 20% payment of Application development on SRS Approval – 30% payment of Application development on completion of UAT. – 30% payment of Application development on receipt of security audit certificate and Go-Live Certificate. – Balance 20% of application development will be paid after 6 months of successful Go-Live of the application. 	
b)	Operation & Maintenance	Application Support	100% cost of this item equally divided into 20 quarters
		Software Maintenance	
		System/Infra Support	
c)	Security Audit cost	100% payment on submission of Safe-To-Host Certificate	
d)	SSI certificate	100% payment on submission of configuration report	
e)	Integration with Other application	100 % payment after successfully integration and go live of each Integration, the payment will be made as per actual number of integrations.	
f)	Hand holding support cost	Monthly after receiving MPR	
g)	Additional Modules / Change Request	100% payment on Go-Live of the additional modules / change request upon approval	

3 Functional Requirements of the Automation System of Minor Irrigation Project, DOWR, Odisha

3.1 Field Officers Work Process, Tracking & Monitoring:

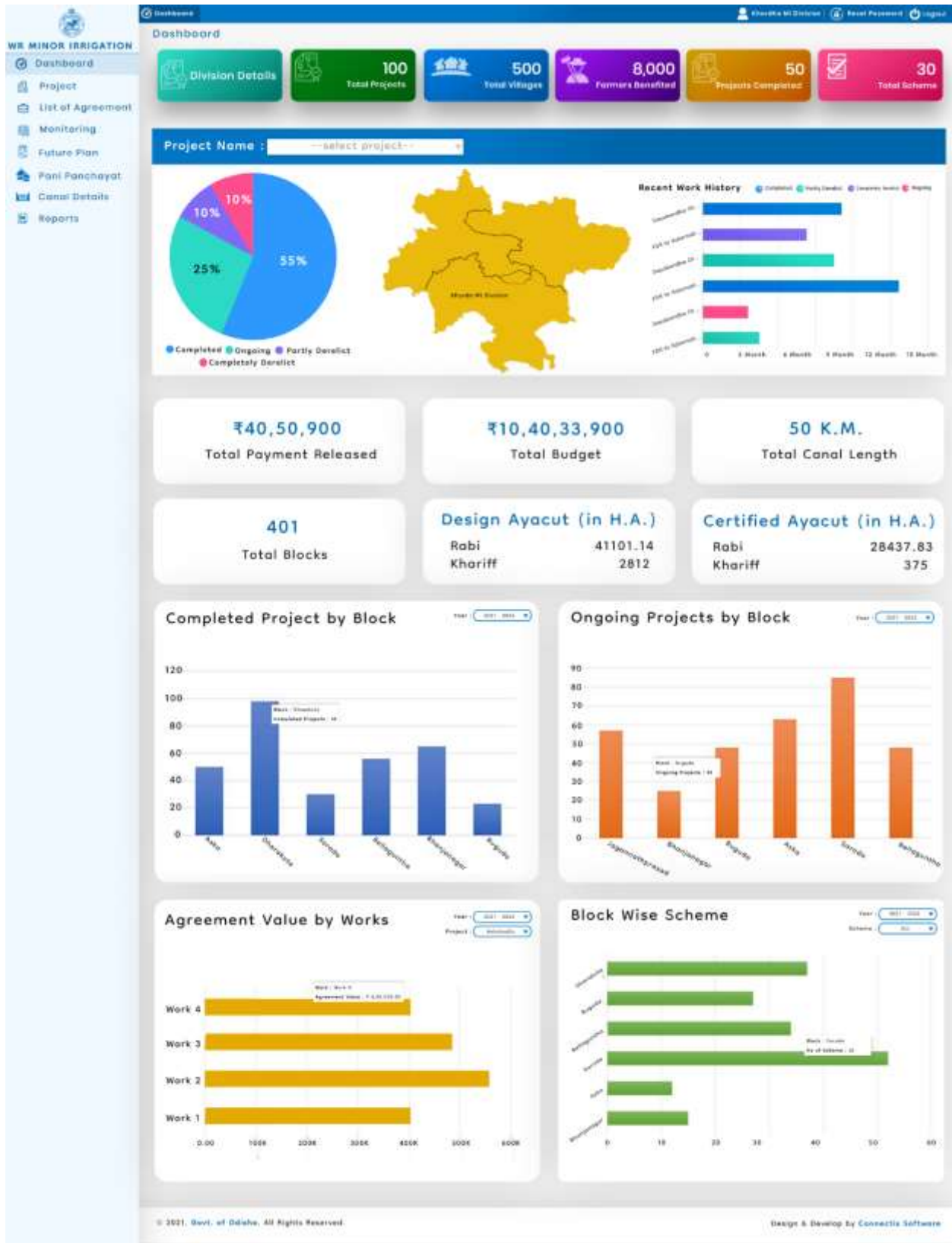
The purpose of this module is to visualize department information in GIS based and process all the works from initiation to execution, closing, tracking & monitoring. Also, this module involves to visualize future plans, Pani panchayat details, Canal details and various kind of reports as per departmental requirement.

3.1.1 MODULE FEATURES

- **Real-Time Interactive Dashboard :**

This dashboard provides the departmental information like:

- ❖ The detail information of division user
- ❖ Total number of projects
- ❖ Total number of schemes
- ❖ Total number of villages benefited
- ❖ Total number of farmers benefited in the village
- ❖ Total number of completed projects
- ❖ A graphical view of work history
- ❖ GIS based Map of division where all the schemes, projects and works can be viewed in a single click
- ❖ Total number of agreements
- ❖ Total value of agreements
- ❖ Total payment released for the agreements
- ❖ Total design & certified ayacut of rabi & kharif crops.



- **List of Projects** : List of projects provides GIS based detail information of projects like project ID, name of project, name of G.P, District, Block etc.

The screenshot shows the 'All Project' dashboard. The left sidebar contains navigation options: Dashboard, Project, List of Agreement, Monitoring, Future Plan, Pani Panchayat, Canal Details, and Reports. The main content area has a search bar for 'Block' set to 'Banapur'. Below the search bar is a table with 7 entries. The table columns are: SL NO, PROJECT ID, NAME OF THE M.L.P, NAME OF G.P, DISTRICT, BLOCK, CATEGORY, TYPE, and ACTION. Each row has a 'View' button in the ACTION column.

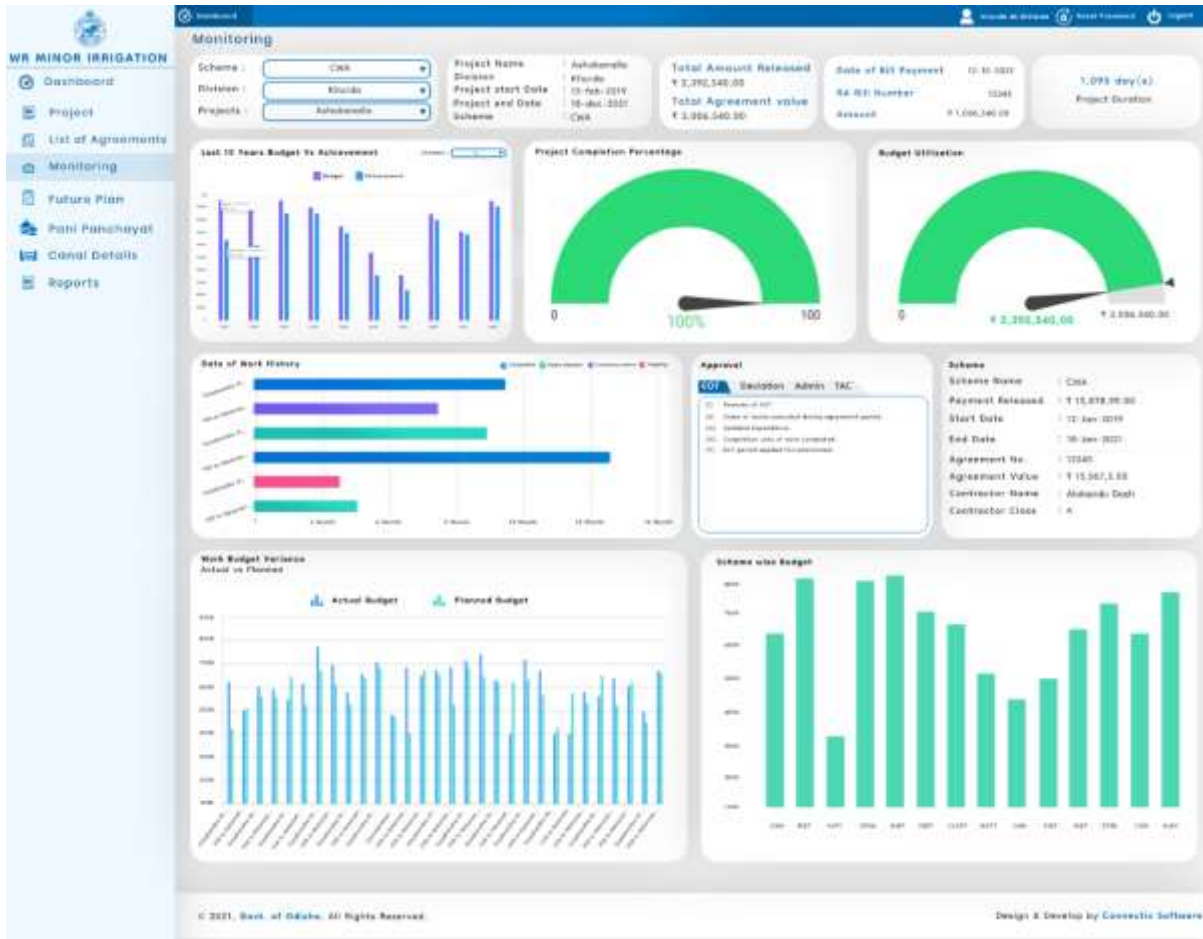
SL NO	PROJECT ID	NAME OF THE M.L.P	NAME OF G.P	DISTRICT	BLOCK	CATEGORY	TYPE	ACTION
1	1967001	Ashkanalla	Ganbherimunda	Khurda	Banapur	C.O.	Res	View
2	1967002	Chandipokhari	Ganbherimunda	Khurda	Banapur	C.O.	Res	View
3	1967003	Dhalapokhari	Naichum	Khurda	Banapur	C.O.	Res	View
4	1967004	Sobindipokhari	Tumungpat	Khurda	Banapur	C.O.	Res	View
5	1967005	Hadnalla	Galas	Khurda	Banapur	C.O.	Res	View
6	1967006	Halandababundha	Narasingpur	Khurda	Banapur	C.O.	Res	View
7	1967007	Dhalapokhari	Markul	Khurda	Banapur	C.O.	Res	View

- **List of Agreements** : This section provides GIS based detail list of agreements initiated from the divisional officer and also provides to initiate a work, execution, closing & reporting.

The screenshot shows the 'All Agreements' dashboard. The left sidebar is the same as in the previous screenshot. The main content area has filters for 'Scheme' (ALL) and 'Projects' (ALL), a search bar, and a 'Create Work' button. Below the filters is a table with 7 entries. The table columns are: SL NO, AGREEMENT NUMBER, WORK NAME, SCHEME, AGREEMENT VALUE, PROJECT NAME, CONSTITUENCY, STATUS, and ACTION. Each row has three buttons in the ACTION column: 'Work', 'Update', and 'Close'.

SL NO	AGREEMENT NUMBER	WORK NAME	SCHEME	AGREEMENT VALUE	PROJECT NAME	CONSTITUENCY	STATUS	ACTION
1	37137	FDR to Ratamati Sarapuri Road	C&I	₹ 400233.00	Ashkanalla	Bhubaneswar	Completed	Work Update Close
2	37138	Gayabandha Otaingh under 2400	AWP	₹ 5523658.00	Chandipokhari	Bhubaneswar	Completed	Work Update Close
3	37139	Gayabandha Otaingh under 2400	RRP	₹ 5523658.00	Dhalapokhari	Bhubaneswar	Ongoing	Work Update Close
4	37140	FDR to Ratamati Sarapuri Road	AWP	₹ 400233.00	Sobindipokhari	Bhubaneswar	Completed	Work Update Close
5	37141	Gayabandha Otaingh under 2400	RRP	₹ 5523658.00	Hadnalla	Bhubaneswar	Ongoing	Work Update Close
6	37142	FDR to Ratamati Sarapuri Road	AWP	₹ 400233.00	Halandababundha	Bhubaneswar	Completed	Work Update Close
7	37143	Gayabandha Otaingh under 2400	C&I	₹ 5523658.00	Dhalapokhari	Bhubaneswar	Ongoing	Work Update Close

- Project Monitoring** : This project monitoring provides end-to-end monitoring of all projects like total number of agreements, total value of agreements, total payment released for the agreements, duration of ongoing project, detail work history like its approval (TAC, EOT, Deviation, Administration etc.), graphical view of work budget variance like actual budget & work progress, graphical view of scheme wise budget and a graphical view of last 10 years budget vs achievement etc.



- **Pani Panchayat Detail** : This section provides GIS based complete detail of panipanchayat under a project with covered ayacut area.

Pani Panchayat

Sub Division: MI Sub-Division, Khurda | Section: MI Section, Khurda | Project: ALL

Sl. NO	SUB DIVISION	SECTION	PROJECT NAME	PANI PANCHYAT	Ayacut Area in [Ha]
1	MI Sub-Division, Khurda	MI Section, Khurda	Getaha	Shamoliya PP	17
2	MI Sub-Division, Khurda	MI Section, Khurda	Anasaha	Anasaha PP	21
3	MI Sub-Division, Khurda	MI Section, Khurda	Bakajira	Bakajira PP	31
4	MI Sub-Division, Khurda	MI Section, Khurda	Laxingh Tanka (Kudiload)	Bharibansardev PP	22
5	MI Sub-Division, Khurda	MI Section, Khurda	Devchandha	Jagannath PP	45
6	MI Sub-Division, Khurda	MI Section, Khurda	Rupat Channel	Jay Mahadev PP	41
7	MI Sub-Division, Khurda	MI Section, Khurda	Mad Bagher PP	Jaya Bhuyan PP	21

Showing 1 to 7 of 7 entries

- **Future Plans** : This section provides complete list of future plans for the minor irrigation projects like detail information of TAC, HPC information, budget, feasibility report etc.

Future Plan

Division: ALL | Scheme: ALL | Project: ALL

Sl. NO	DIVISION	PROJECT NAME	TAC INFORMATION	HPC INFORMATION	BUDGET	SCHEME	FEASIBILITY REPORT	DATE OF PROVISION
1	Khurda MI Division	Kakaniwala	Some TAC Information	Some HPC Information	₹ 113403412.00	CAN	Some Feasibility Report	1/8/2022
2	Angul MI Division	Chandipokhari	Some TAC Information	Some HPC Information	₹ 2344402424.00	KRP	Some Feasibility Report	12/8/2022
3	Cuttack MI Division	Dholapokhari	Some TAC Information	Some HPC Information	₹ 4040170872.00	KRP	Some Feasibility Report	12/11/2021
4	Balasore MI Division	Devinipokhari	Some TAC Information	Some HPC Information	₹ 572012728.00	Low	Some Feasibility Report	18/8/2021
5	Bhadrakant MI Division	Hathalia	Some TAC Information	Some HPC Information	₹ 2344022252.00	KRP	Some Feasibility Report	11/8/2022
6	Bargarh MI Division	Chandipokhari	Some TAC Information	Some HPC Information	₹ 4040170872.00	KRP	Some Feasibility Report	17/8/2021
7	Balabant MI Division	Dholapokhari	Some TAC Information	Some HPC Information	₹ 2344402424.00	KRP	Some Feasibility Report	12/11/2021

Showing 1 to 7 of 7 entries

- **Canal Details** : This section provides the detail list of reservoirs and diversion weirs canal system.

SL NO	RHP NAME	BLOCK	CATCHMENT IN Sq. K.m.	TYPE OF DAM	LENGTH OF THE DAM (IN M)	TYPE OF SPILLWAY	NO. OF HEAD REGULATOR
1	Ashokanilika	Balangur	5.4	Homogeneous Earth FR Dam	374	Ogee	1
2	Achutabandha	Begunia	2.8	Homogeneous Earth FR Dam	300	Broad Crested	2
3	Hajipur	Begunia	4.3	Homogeneous Earth FR Dam	380	Flush Sluiceway	2
4	Jagbalika (Tulabari)	Begunia	3.9	Homogeneous Earth FR Dam	1200	Broad Crested	2
5	Bhambakandha	Begunia	2.24	Homogeneous Earth FR Dam	410	Broad Crested	1
6	Balibara	Bhubaneswar	1.8	Homogeneous Earth FR Dam	410	Broad Crested	2
7	Dera	Bhubaneswar	35.2	Homogeneous Earth FR Dam	817.20 m	Ogee	5

3.1.2 SOLUTION HIGHLIGHTS

- Separated functions for each group of users
- Disabled access for unauthorized users
- Easy search and update necessary records
- Ability to track & monitor different type of work & asset

3.2 Higher Authority Work Tracking & Monitoring :

The purpose of this module is to visualized department information in GIS based and keep track & monitor all the works district wise from initiation to execution, closing, reporting and also this module involves to visualized future plans, Pani panchayat details, Canal details and various kind of reports as per departmental requirement.

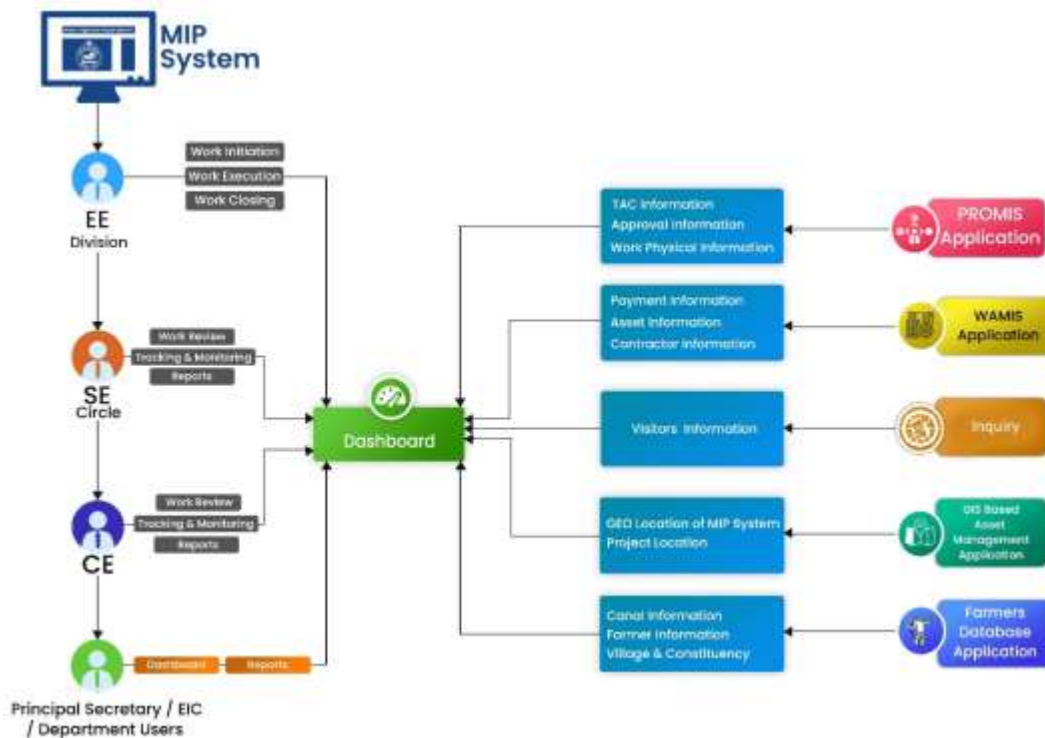
3.2.1 MODULE FEATURES

- **Dashboard** : This dashboard provides the departmental information like:
 - ❖ Information of all district division officers
 - ❖ Total number of projects present in the minor irrigation
 - ❖ Total number of villages benefited
 - ❖ Total number of farmers benefited in the village
 - ❖ Total number completed projects
 - ❖ A graphical view of work history
 - ❖ GIS based Map of Odisha state where all the division, project, work can be viewed in a single click
 - ❖ Total number of agreements
 - ❖ Total value of agreements
 - ❖ Total payment released for the agreements
 - ❖ Total design & certified ayacut of Rabi & Kharif crops.

- **List of Projects** : List of projects provides the detail information of projects which is GIS based and Higher authority can also view all the projects division wise.
- **List of Agreements** : This section provides the detail list of agreements initiated from the divisional officer which is viewed as GIS based and also provides a detail information of work initiation to execution, closing & reporting.
- **Project Monitoring** : This project monitoring provides end-to-end monitoring of all projects like total number of agreements, total value of agreements, total payment released for the agreements, duration of ongoing project, detail work history like its approval (TAC, EOT, Deviation, Administration etc.), graphical view of work budget variance like actual budget & work progress, graphical view of scheme wise budget and a graphical view of last 10 years budget vs achievement etc.
- **Pani Panchayat Detail** : This section provides GIS based the complete detail of panipanchayat under a project with covered ayacut area.
- **Future Plans** : This section provides complete list of future plans for the minor irrigation project like detail information of TAC, HPC information, budget, feasibility report etc.

3.2.2 SOLUTION HIGHLIGHTS

- Role Based access control
- Customized processes
- Secure portal framework



3.3 Admin Console

3.3.1 User & Master Management

- a) Creation of master data
- b) User creation
- c) Tagging user types with User
- d) Creating and managing the login credentials
- e) Profile updating of users by admin or by individual users

3.3.2 Roles and Rights

- a) Provide access rights to the users
- b) Tagging of departmental users with respect to the designation and role
- c) User access management
- d) Assign roles and rights to the users

3.3.3 Management Dashboard:

The Automation System of Minor Irrigation Project of Water Resources Department, Odisha will be able to see the desired reports with different filter options.

- Ongoing & Completed Project Report
- District & Block Wise Project Wise
- Agreement Details Report
- Monthly Progress Report
- Total Agreement & Total Payment Released Report.

3.4 Mobile Application for Field Officers:

The Automation System of Minor Irrigation Projects for Water Resources Department, Odisha will have a mobile application for field officers where they can update the work process on a daily basis which the geo-tagged photos will be uploaded through the Mobile Application. Once updated, information will be sync to the web application and that will be reflected to their concerned higher authorities as well.

The mobile application will have the following features:

- Field Officer Dashboard
- Work Process Section
- Monitoring
- Photo Upload (Pre-Work, In-Progress, Close Work)
- Real-Time Update Notification

3.5 Integration:

Integration with following applications can be done, the list and number of integrations can be change as per requirement of department.

- g) PROMIS
- h) WAMIS
- i) GIS Based Asset Management System
- j) Farmers Database of water resource department
- k) Mo sarkar



3.5.1 Integration with PROMIS: -

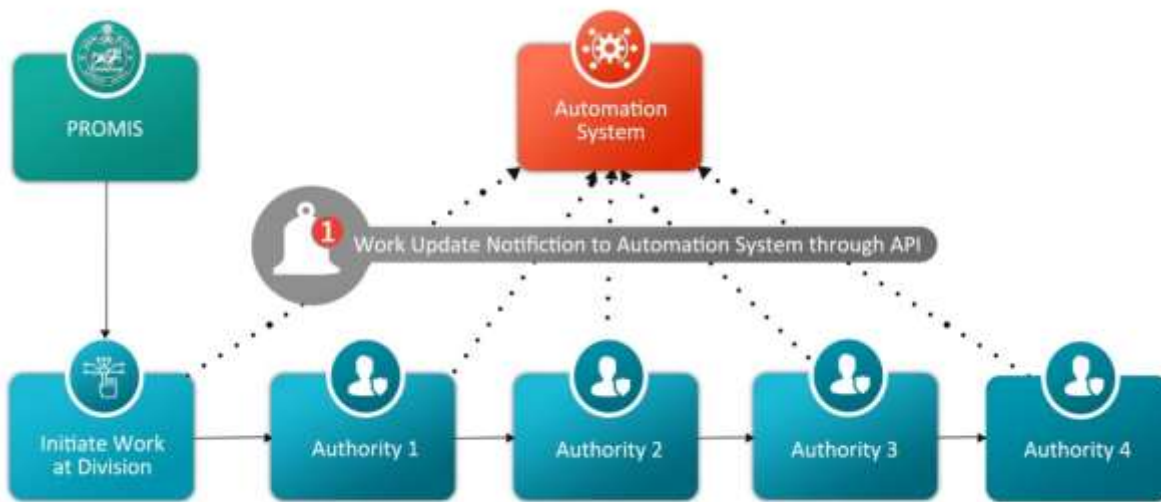
Background

Department of Water Resources procure a wide variety of goods and services and undertake execution of works in pursuance of their duties and responsibilities. Department of Water Resources prepared a set of categories such as Procurement of Work, Procurement of Good & Procurement of Service or all require approval at various level of authority. The process of approvals is Administrative Approval (AA), Technical Sanction (TS), Technical Bid, Financial Bid, Tender Cancellation, EoT, Deviation and Price Escalation etc. Currently the application for any approval is initiated at Division Level. Such projects either approved at Division Level

or moved to the appropriate (higher) level through proper channel. At higher level, the system gets approved or returned for compliance by sub-ordinate office or sometimes may not get approved at all due to obvious reasons.

Integration

- ❖ When a work is processed in PROMIS application then each update will go to Automation System of Minor Irrigation Projects application as a notification. The information/data will be saved in the system in every update. The information needs to be sent from PROMIS approval levels like Administrative Approval (AA), Technical Sanction (TS), Technical Bid, Financial Bid, Tender Cancellation, EoT, Deviation and Price Escalation etc. and their status will be pushed to Automation System of Minor Irrigation Projects application. API can send other information's like cost estimation at different approvals.
- ❖ Work extension required information can be sent from Automation System of Minor Irrigation Projects application to PROMIS application through API.



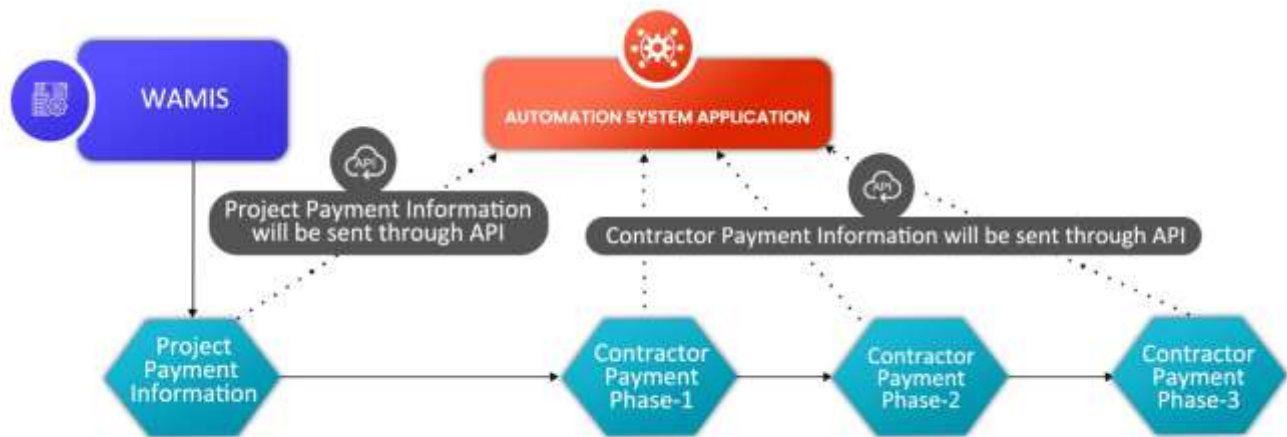
3.5.2 Data Sharing from WAMIS: -

Background:

The department integrated computerization of accounts system in field offices in line with other engineering departments of the state. The application named WAMIS (Works and Accounts Management Information System) is being implemented in offices so as to further streamline accounts procedures. Presently, 154 offices from all sectors are able to submit their account through WAMIS.

Integration

- ❖ The purpose of integration with WAMIS application is to monitor the different works awarding contracts payment information. All the information of projects can be fetched through API, this work can be monitored and tracked in Automation System of Minor Irrigation Projects application.



3.5.3 Integration with GIS Based Asset Management: -

Integration

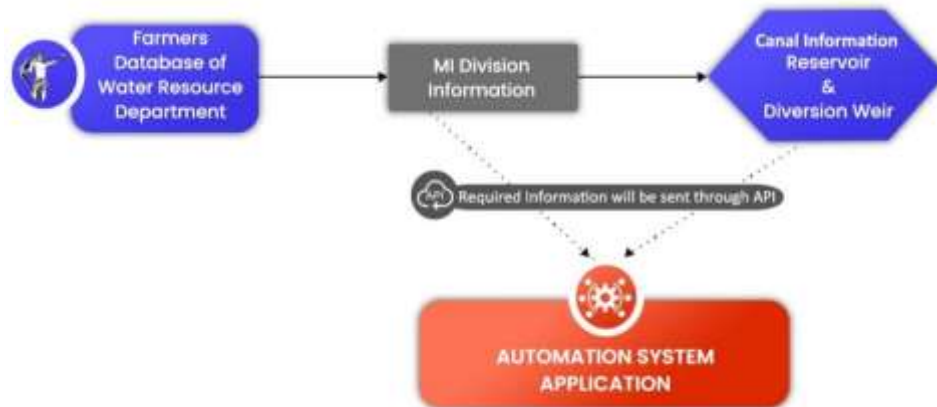
- ❖ The purpose of GIS system integration is to capture, store, manipulate, analyze, manage, and present all types of geographical data as per the works. With help of this GIS system officers can see the exact location of the works and this GIS system will be implemented in all types of report section as well.



3.5.4 Integration with Water resource Farmers Database: -

Integration

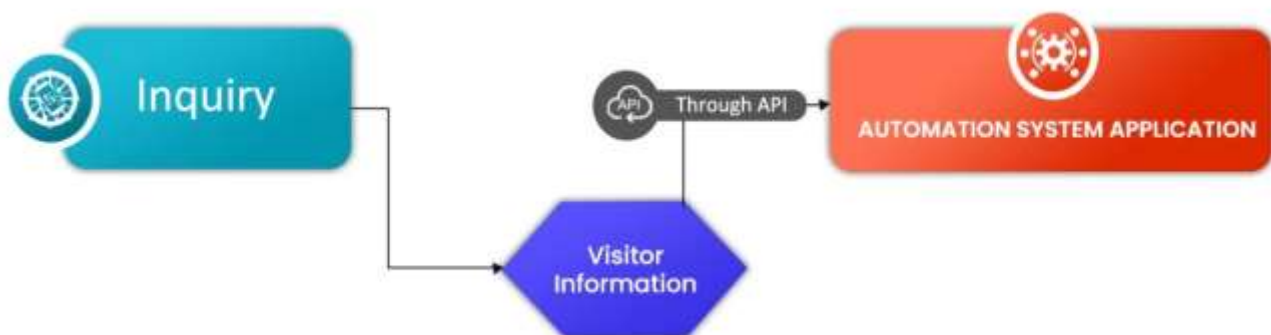
- ❖ The purpose of Farmers Database application integration is to synchronize all required information from Automation System of Minor Irrigation Projects application to farmers database application through API. Similarly, if any information needed from farmers database, that will also be fetched from farmers database application through API.



3.5.5 Integration with Mo Sarkar: -

Integration

- ❖ The purpose of Mo Sarkar application integration is to synchronize visitor's information from Mo Sarkar application to Automation System application through API which will be visualized in the dashboard.



3.6 Implementation of Single Sign-on: -

- ❖ Single sign-on (SSO) is an authentication method that will enables users to securely authenticate with multiple applications and websites by using just one set of credentials.

The login flow usually looks like this:

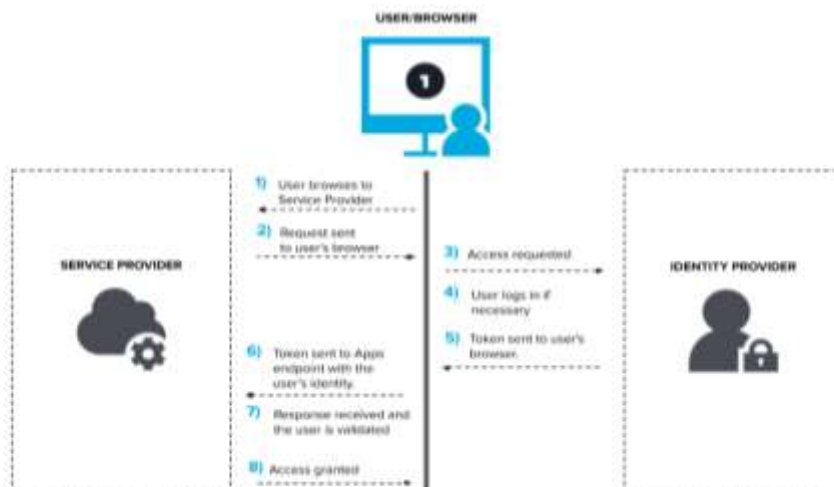
- ❖ A user browses to the application or website they want access to the Service Provider.
- ❖ The Service Provider sends a token that contains some information about the user, like their email address, to the SSO system as part of a request to authenticate the user.
- ❖ The Identity Provider first checks to see whether the user has already been authenticated, in which case it will grant the user access to the Service Provider application.
- ❖ If the user hasn't logged in, they will be prompted to do so by providing the credentials required by the Identity Provider. This could simply be a username and password.
- ❖ Once the Identity Provider validates the credentials provided, it will send a token back to the Service Provider confirming a successful authentication.
- ❖ This token is passed through the user's browser to the Service Provider.
- ❖ The token that is received by the Service Provider is validated according to the trust relationship that was set up between the Service Provider and the Identity Provider during the initial configuration.
- ❖ The user is granted access to the Service Provider.

Single Sign-on Workflow: -

4 Role and Responsibility of different stakeholders:

4.1 Responsibility of the Directorate of Water Resource:

Department of Water Resources shall play an important role in the fruition of the



envisioned system. The following are the roles and responsibilities.

- Provide information on Business Process / Domain related issues to the SI.
- Provide data /documents that need to be digitized and brought to the system.

- Provide and validate all users' requirement documents.
- Review the deliverable (interim and final) submitted by the SI.
- Identify Officers for different training needs.
- Approve the SRS, FRS in accordance with OCAC.

4.2 Responsibilities of OCAC:

- OCAC will supervise and monitor project implementation, and coordinate with to facilitate smooth implementation of the project, and, for meeting the administrative requirements pertaining to the project.
- Co-ordinate with Automation Process of Minor Irrigation Scheme for Department of Water Resources, other departments and SI for all the activities needed for successful rollout of the project
- Approving Project Management Plan and Project Inception Report submitted by the SI to implement the project within a defined timeline.
- Approving the project reporting formats submitted by the SI to monitor and analyze the progress of the project.
- Monitor the Project Implementation in terms of managing the project timelines, quality of deliverables by close coordination with SI.
- Conducting Weekly / Monthly project review with the SI in regards to the progress of the project
- Monitoring key metrics and SLA compliance by SI as per RFP terms
- Reviewing and approving/organizing approvals for all the deliverables such as SRS, SDD, Design Documents etc. submitted by the SI within a defined timeline throughout the implementation phase in consultation with Department.
- Project tracking and monitoring for ensuring to timeline.
- Establishing appropriate processes for notifying the SI of any deviations from the norms, standards or guidelines at the earliest instance after noticing the same to enable them to take corrective action
- Reviewing the UAT readiness & overseeing the UAT and the results thereof
- Overseeing the progress of user training and coordinate signoff activities
- Review and monitor the completeness of the solution with respect to requirements and performance/acceptance expectations from the solution.
- Direct and supervise the activities needed for stabilizing the system and tuning the system for meeting the performance expectations during the early phase of O&M post-go live.
- Coordinating and overseeing procedures for undertaking quality audits of the system on a periodic basis
- Timely risk analyses.
- Review and provide recommendations on the change requests identified by the SI and assist Department in approving/modifying/rejecting such requests

4.3 System Integrator

- Prepare and submit the Integrated Project Management Plan (IPMP) for implementation of the project. The IPMP shall comprise of the all the components of

deliverables prepared for Inception

- Prepare the project reporting formats to report the progress of the project to OCAC for approval
- Participate in Weekly / Monthly project review in regards to the progress of the project
- Identify and escalate issues/risks OCAC and provide the mitigation plan
- Adhere to the directions of OCAC as and when provided.
- Prepare and deliver for approval all the deliverables such as SRS, SDD, and Design Documents etc. within a defined timeline, as agreed in the IPMP and to the satisfaction of OCAC / Department, throughout the implementation phase.
- Install/configure/deploy all the components of system and get approval from OCAC.
- Provide detailed training plan to OCAC and Department and train the personnel identified by the I & ESI department and report the results.
- Ensure UAT readiness & conduct the UAT and report the results thereof to OCAC and obtain acceptance thereof. The UAT report should also include the feedback of the UAT participants.
- Ensure completeness of the solution with respect to requirements and performance, acceptance expectations from the solution and get signoff from appropriate authority through OCAC.
- Coordinate with System Integrators of other relevant system for ensuring that system seamlessly exchanges data with them.
- Deploy and manage hand holding support for addressing the issues and incidents raised by users; resolve such issues and report the status OCAC on a periodic basis
- Prepare SLA report based in the SLA parameters given in RFP on a continuous basis and deliver it to OCAC for review and necessary action.