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Dated: 2nd September, 2011

Dear Sir,

Please find enclosed draft proposal to enhance reach of existing NREGASoft solution using mobile technology. The Phase-I proposes to facilitate transfer of wages directly to the bank accounts of JobSeekers and Phase-II deals with developing a mobile based infrastructure (application and associated equipments) to facilitate demand, allocation, attendance (Muster-roll) and Measurement processes with alphanumeric data to reduce time delays.

You would appreciate that the solution architecture involves lots of complicated processes at grass-root level and role of different stakeholders particularly of state governments becomes very important in such a collaborative project. Therefore, it is submitted that the ministry may like to consult with the pilot states to have their feedback so that the proposal could be improved and finalized for implementation.

With regards,

Yours sincerely,


(B K Gairola)

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Ministry of Rural Development
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CC : Shri D. K. Jain, Joint Secretary (MGNREGA), Ministry of Rural Development.

Encl: As above

Real-time Transaction-based eGovernance Solution for MGNREGS

Draft Project Proposal For Ministry of Rural Development

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Department of Information Technology

Ministry of Communications & Information Technology

Government of India.

September, 2011

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1 Introduction

1.1 Project Background

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) aims at enhancing the livelihood security of people in rural areas by guaranteeing hundred days of wage-employment in a financial year to a rural household whose adult members volunteer to do unskilled manual work. The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) came in force on 2 February 2006. Initially, the act was applicable to 200 poorest districts of India. Later, it was extended to another 130 districts in 2007-2008. Since year 2008-2009 its coverage has been extended to all districts of India as per the provisions of MNREGA. The allocated budget for year 2011-12 is around 40,000 crores for this program.

National Informatics Centre (NIC), along with Ministry of Rural Development (MoRD) and other stakeholders, conceptualized web enabled Management Information System (MIS), NREGASoft, to address the planning & monitoring needs of the scheme. NREGASoft is a local language enabled, workflow based transaction level system designed for all activities of all stakeholders across the country. It is hosted on MGNREGA portal (<http://nrega.nic.in>) and provides detailed information regarding implementation of the scheme. The portal provides public access to about 11.5 crore jobcards with 24 crore registered workers and around 6.5 crore muster rolls giving details of daily attendance of workers working on MGNREGA work site along with the amount paid to them. The Ministry relies on the fund utilization information generated through NREGASoft for release of funds to States / Districts.

NREGASoft is accessible by all stakeholders providing them a single window interface for all NREGA related activities. This system has made a good progress in ensuring transparency by making the various registers, muster rolls, documents, available in the public domain. It is fully compliant with the requirements of the MGNREGA and maintains accounts, generates required registers, documents in the mandated formats. It has also proved useful in tracking the Panchayat-wise shelf of the works/projects, pattern of demand for work, allocation of work, muster-roll, social audit data, track fund transfer to various implementing agencies, facilitate information exchange and provide

a platform for registering grievances of the workers. Overall, this system has had a positive impact and has been able to provide definitive inputs for planning purposes.

1.2 Real-time Transaction-based System for NREGS

While NREGASoft has served well until now, there are new areas of extension, which could help streamline the implementation of MGNREGA. NREGASoft provides transactional capabilities such as demand for work, work allocation, attendance on muster rolls, measurement book, generation of wage list, material procured, administrative expenses, and pay order etc.

Though the design of software is capable of being used in fully tied workflow manner, owing to several factors such as ICT capability and availability at GP level, governance processes etc. States have been using it as an MIS alone i.e. entering the details when particular phase is over. Also, there are some areas where activities are carried out of Panchayat Office, such as estimates, attendance, measurements and payment, and could be addressed effectively with some handheld ICT device having connectivity and interoperable with NREGASoft. The existing features when coupled with electronic data capturing and electronic fund transfer will provide a robust end-to-end system that will not only hasten the processing but also address some of the other key concerns as detailed in subsequent paragraphs.

One of the key implementation concerns today is the delay in entering of data in NREGASoft due to lack of ICT reach at point of data generation, which often leads to a delay in preparation of the wage list, eventually affecting the timely processing of wage payments. This delay can be attributed to several governance and e-governance factors such as inadequate administrative and technical staff, limited outreach of financial institutions, ICT infrastructure etc. Other areas of concern are fudging of muster roll, work measurement, timely payment of wages to the MGNREGA beneficiaries and parking of funds at various levels.

To address these, it is proposed to capture data at the grassroots in real-time using latest ICT technology. This would significantly contribute towards achieving the objective of real time flow of information, report generation and inhibiting delays in payments etc. Also, this system will provide a greater degree of control over the funds

parked at various levels. It is also proposed to incorporate electronic fund transfer for faster and efficient payments to workers.

This report presents the technology solution, implementation roadmap and capacity building requirements for enabling real-time transaction-based NREGASoft.

1.3 Project Objectives

This system is envisaged to automate the entire activity flow of the NREGS job seeker right from demand of work to payment of wages. The specific objectives are as under:

- Reduction in the turn-around time required for wage processing and payments
- Reduction of workload at Block Program Office (BPO) / Gram Panchayat (GP)
- Timely availability of data for strategic decision making
- Fostering eGovernance at grassroots

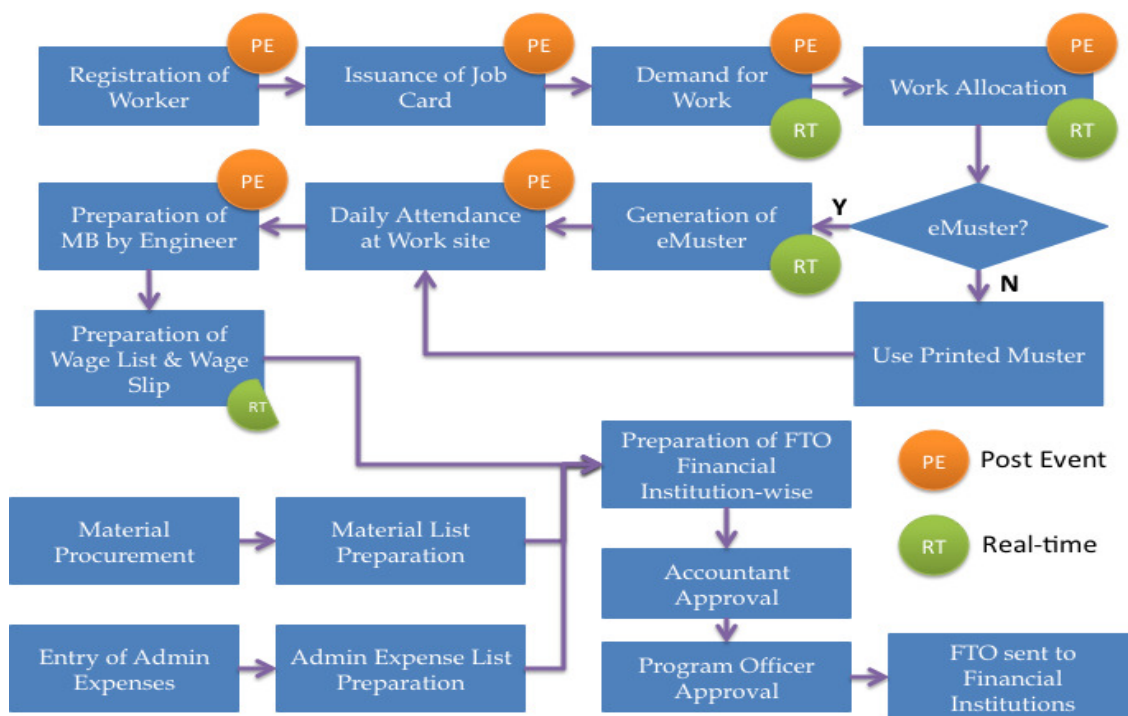
2 Existing System

Barring a few states such as Karnataka, Kerala, West Bengal, Tamil Nadu, Himachal Pradesh, and to some extent Gujarat; the entire workflow at GP is manual. The records are periodically taken to Block Office and updated on NREGASoft. On an average the delay in data entry is about one month. Owing to this, the situation, as visible to the Central / State Program Managers, is atleast a month old and may lead to inefficient and delayed decision making.

2.1 Activity Flow

NREGASoft has modules available for complete work-flow, currently, most of the information is entered ex post facto and some of the information is entered in real-time. The following diagram depicts the flow of activities, highlighting the status of computerization for each activity.

Figure 2-1: Existing Activity Flow



The outcome of the activities with the 'PF' badge is mostly updated to NREGASoft after the event has occurred and the activities with the 'RT' badge are mostly carried out

directly on the NREGASoft. For instance, 'Registration of Workers' is generally carried out at the Gram Panchayat on a 'Worker Registration' register maintained by the Rozgar Sewak and periodically this register is carried to the Block, where an entry is made in NREGASoft. Similarly, the 'Demand for Work' is being noted directly using NREGASoft at GP level in Karnataka, while the same activity is done in a manual mode in most of the other States. The 'partial RT' badge on 'Preparation of Wage List and Wage Slip' denotes that this activity is done using NREGASoft only for those States / Districts where the information pertaining to both 'Attendance' and 'Measurement' is updated in NREGASoft and then it is used for Wage List and Wage Slip preparation.

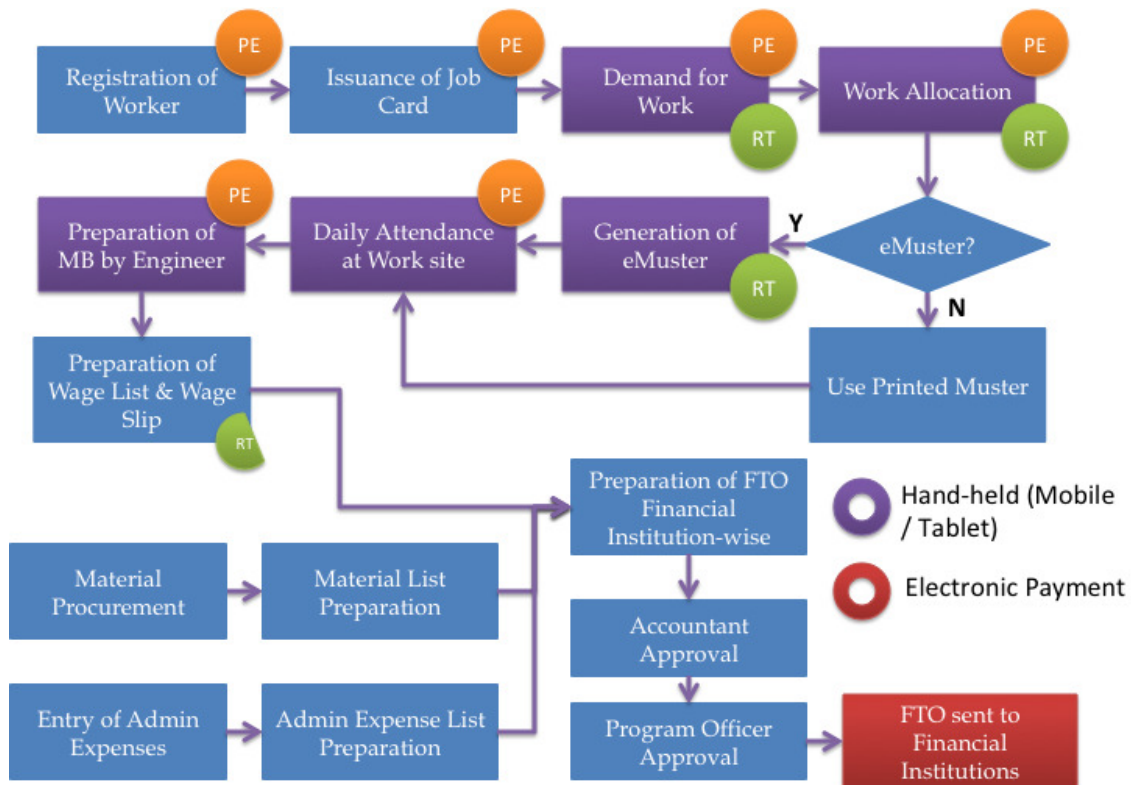
3 Proposed System

The proposed system takes cognizance of the bottlenecks in the current system and aims to provide alternatives grass-root level data capture and electronic transfer of data & funds so that the overall system can become truly real-time and transaction-based.

3.1 Activity Flow

While the data elements being captured and the operational procedure will remain unaltered, modifications will be required in the manner of capturing and transferring of data. The block diagram below depicts the functional flow of the proposed system. The 'Purple' blocks depict the processes that will be carried out on handheld devices such as mobile or tablet and the 'Red' block indicates the interfacing with the Banking systems for electronic funds transfer and payments.

Figure 3-1: Proposed Activity Flow



3.2 Solution Components & Stakeholders

The following three solution components emerge for effective implementation of the proposed system:

1. Field-level Electronic Data Capture – Demand for Work, Work Allocation, Attendance, and Work Measurement.
2. Data Processing – Calculation of Wages, Wage List Generation, and Purchase Order Preparation.
3. Electronic Payments – Crediting Workers Account.

The first component i.e. Field-level Electronic Data Capture requires massive operationalization and will be taken up in Phase II. The second component i.e. Data Processing and the third component i.e. Electronic Payment will be taken up for implementation in Phase I. The detailing of the Phases is available in the Section 4.

The key stakeholders are:

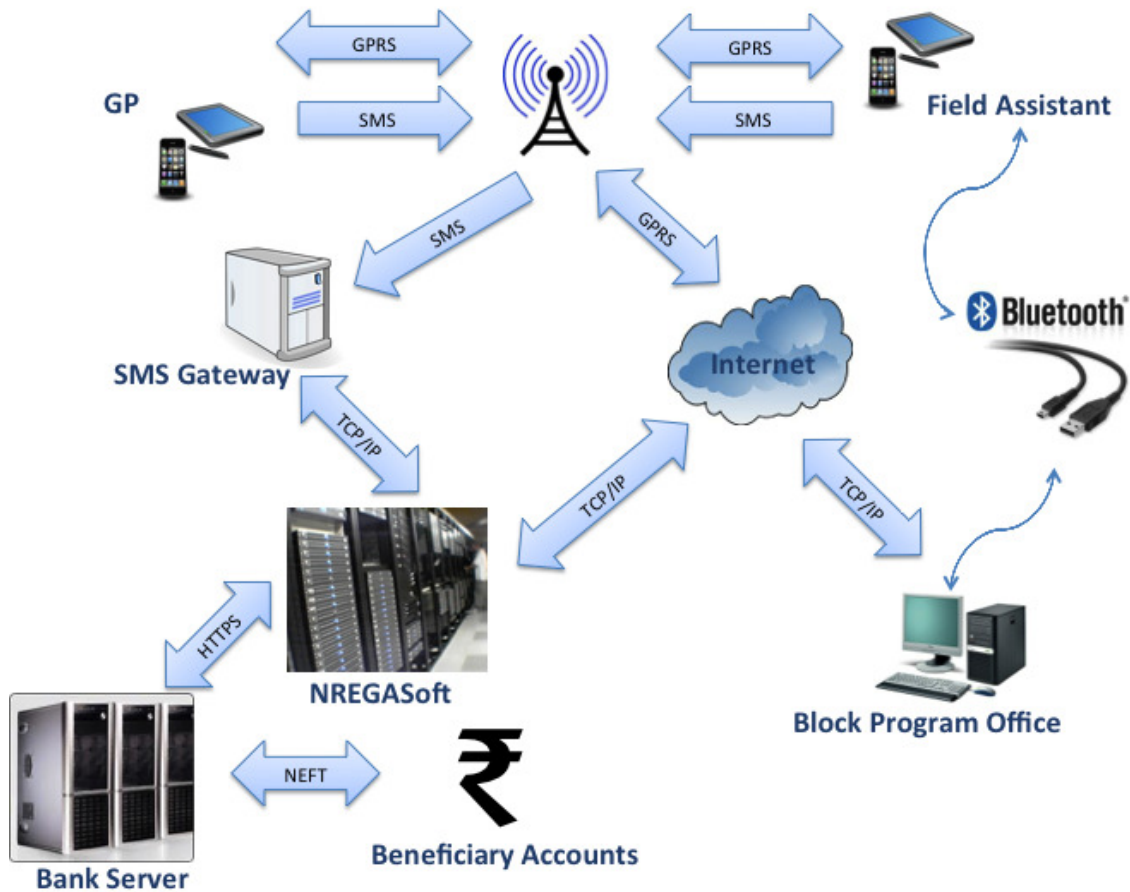
- **Ministry of Rural Development, GoI** – Will be responsible for approving the project and providing overall guidance and strategic support for project implementation.
- **States' Department of Rural Development** – Will be the nodal department for implementation of the project and will bear the ownership of successful implementation. They will be responsible for managing the following stakeholders:
 - **Banks** – Will be responsible for accepting the wage list electronically from NREGASoft and ensuring transfer of payment to the workers' accounts in a secured manner.
 - **Implementation Agency (IA) / Service Provider (SP)** – Will be responsible for operationalizing the Handheld based solution (Phase II).
- **National Informatics Centre** – Will be the technical solution provider.

3.3 Technical Architecture

It is envisaged to use handheld devices such as Tablet and/or mobile phone to access and upload data. The uploading of data can either be done through GPRS or SMS, but data download has to be either done through GPRS or by connecting the handheld device with an Internet connected PC, so that it can download the data from NREGASoft. The handheld devices will be used for data capture and transmission to central server of NREGASoft and will store only basic data in their local database. The handheld

application will not be processing the data; NREGASoft will do all data processing and will ensure secure transfer of payment related data to the Bank's server. Further payment shall be operationalized through the banking channels such as NEFT, RTGS etc. This technical solution enables capture and transmission of data in real-time to the NREGASoft, hence reducing the delays and also making the system seamless. The handheld application can be installed and updated by connecting the handheld to the PC at Block Program Office through cable or bluetooth. In the absence of GPRS connectivity the data download / upload may also be done through the Block level PC through data cable or bluetooth. The electronic fund transfer will be implemented by interfacing with commercial banks.

Figure 3-2: Technical Architecture



To make the system depicted above operational it is required to develop the following software.

1. Handheld Application – This application should be capable of both online and offline operation and should enable automatic synchronization on availability of connectivity without any user intervention.
 - a. Core Functionality
 - i. Data Download to device – The Application should be able to push / pull data from NREGASoft vis-à-vis attendance and measurement
 - ii. Data Capture – The Application should be able to capture data from field level through simplified data entry screens that are easy to use on mobile screens. The attendance, measurement, work demand and allocation related data attributes shall be captured.
 - iii. Upload of Data – The data should be updated to NREGASoft at a defined periodicity and after successful upload the data should be wiped off from the device. The device should, at all times, store the active data related to muster roll and work measurement.
 - iv. User Management – The Application should be able to uniquely associate a device with the owner apart from user name/password based access management.
 - b. Other requirements
 - i. The application should be developed using open standards and should be usable on a wide variety of handheld devices.
 - ii. Updates to the application should be automatically pushed to the device whenever it is connected to the PC having the synchronization software.
 - iii. Minor updates should be pushed over the air.
2. NREGASoft Enhancement
 - a. Core Requirement
 - i. Synchronization – The synchronisation software should be so designed such that most of the synchronisation is done in the background with any user intervention. Since, connectivity may be sporadic it is important to enable both over the air and physical connection synchronization.
 - ii. Push / Pull Works – The device should be able to pull the list of available works and store locally on it and also push any changes made on the works in the offline mode to the NREGASft application.
 - iii. Generation of Wage List, Material List and Administrative Expenses List
 - iv. Generation of payment information in the agreed upon format with RBI.
 - v. Ability to record the acknowledgement of payment information receipt by the RBI and update the confirmation of funds transferred received from the RBI.
 - b. Other Requirements
 - i. Work estimation module – This module will be required to enable preparation of work estimates by entering the defining parameters of the work to be

undertaken. For instance, if a pit needs to be dug, the user should be able to enter the length, breadth, height and should be able to generate the estimate.

4 Geographical Scope

Based on the criteria defined in 5.1.1, four States, viz. Gujarat, Karnataka, Orissa, and Rajasthan have been identified to kick-start the project. Any other State satisfying these criteria can also be provided support for implementation. The implementation will be carried out across the States in each of the four States as per a rollout plan finalized by the State.

Table 1: Geographical Scope

State	Districts (#)	Blocks (#)	Gram Panchayats (#)
Gujarat	26	225	14146
Karnataka	30	176	5631
Orissa	30	314	6235
Rajasthan	33	243	9201

5 Implementation Approach

The implementation of such a large-scale project requires significant planning and capacity building. Hence, it is proposed to carry out the project in two Phases.

Phase-I will encompass the implementation of Electronic Fund Transfer leveraging the Core Banking infrastructure of commercial banks. States will be required to identify one or more Key banks, which will hold the funds in a Central Account with them. On receipt of digitally signed Wage List these banks will debit the Central Account and credit the account of the worker. The Wage List will be generated through NREGASoft on a daily basis for all those Payment Orders that have been approved by the authorized signatory using digital signatures on NREGASoft. The same solution may be extended for payment of material and administrative expenses.

Phase-II will encompass field-level electronic data capture through handheld devices. The Rozgar Sewak will use the handheld device for demand registration, attendance and will directly upload these to the NREGASoft server. Similarly, the Engineer will be able to use the handheld device to record the work measurements and upload it to NREGASoft. These inputs will be used by NREGASoft to calculate the wages and generate the Wage List automatically. This wage list will be available to the authorized signatories to verify and authorize by using digital signatures. On authorization, NREGASoft will automatically generate a Fund Transfer Order (FTO) to be passed over to the Banks for crediting the payments to the workers' accounts.

The implementation of these Phases can be undertaken in parallel, as the Phase-II activities do not have a direct dependence on the Phase-I completion.

A Central Project Management Unit (CPMU) is proposed to be setup at MoRD for engaging with the States on a daily basis and guiding / monitoring them for implementation of the project and a State Project Management Unit (SPMU) is proposed at the State for co-ordination, data management and overall project monitoring. These teams will be formed during the Phase I implementation and will continue during the Phase II too.

5.1 Phase-I

In this phase, Electronic Fund Transfer & Payments will be undertaken. The software enhancement required in NREGASoft to enable this is underway. Necessary customization will be affected as per the requirements of the Bank's selected by the State.

5.1.1 Pre-requisites for States

The States should:

- Agree to make all NREGS payments through a Central Account being operated at the State level.
- Internet connectivity should be available at least till Block level.
- Possess at least two operational PCs at every Block with USB connectivity.
- Agree to generate all Payment Orders for the bank payments exclusively using NREGASoft.
- Adopt Digital Signatures for approving the bank payments.

5.1.2 Activities

The following activities will be required for successful implementation of Phase-I in any State:

- Identification of Key Bank(s) by the State.
- Signing up of an Agreement / MoU between the State and the Key Bank(s) to enable a seamless electronic payment mechanism.
- Co-ordination with the selected Key Bank(s) for Interfacing NREGASoft with the Bank's Core Banking System.
- Issuance of Digital Signatures to all Approving Authorities, typically an Accountant and the Program Officer at every Block and the District Program Co-ordinator at every District, in the State.
- Training the Approving Authorities on the usage of Digital Signatures for approving the payments.
- Positioning adequate technical manpower at State / District for handholding and troubleshooting support on a daily basis.

At the Central level the following activities will be required:

- Engage with States and help them understand the pre-requisites for the implementation. Also, guide them in satisfying the pre-requisites.

- Help the States in defining the terms of agreement with the Bank(s).
- Development of Banking interface for NREGASoft for each State.
- Issuance of Digital Signatures upon request from States.
- Provide training and handholding support.

5.1.3 Requirements

The requirements for implementing this project have been segregated into IT and Capacity Building.

5.1.3.1 IT

The IT requirements are as under:

- Software development in NREGASoft to interface with Bank’s Core Banking System.
- Hardware augmentation at the Data Centre.
- Issuance of Digital Signatures to all the authorized Payment Authorities in the States.

5.1.3.2 Capacity Building

Capacity building will encompass provision of manpower at States and Centre, training and establishing a national level call center.

5.1.3.2.1 Manpower

At States:

Each state will be required to position technical support manpower at the State level and augment the State NIC team adequately to ensure State level customizations in NREGASoft. The Technical Support staff may be hired through NICSI / State level empanelments. NIC will nominate one official to anchor this project at State level and he will be supported by hired technical staff as indicated in Table 3: Technical staff at State NIC.

Table 2: Technical Support Staff at each State

Level	Number
-------	--------

Level	Number
Operations Manager	1
Operations Assistant	2

Table 3: Technical staff at State NIC

Level	Number
Sr. Developer	1
Developer	1

At Centre:

The following composition is proposed for the PMU during the Phase-I. Later, this team will be up-scaled for implementation of Phase-II.

Table 4: Manpower at MoRD

Level	Number
Principal Consultant	1
Senior Consultant	2
Junior Consultant	2

Level	Number
Senior Solution Architect	2

5.1.3.2.2 Training

Training will be provided on usage of Digital Signatures for generating the Payment Orders using NREGASoft. Trainings will be conducted at State level and officials from all the Districts and Blocks will be trained. The trainers would be available at the State level for a period of one week. The schedule for training will be finalized by the trainers in consultation with the State and concerned District level Program Offices. The following staff is required to be trained:

Table 5: Officials to be trained

Level	Number
Program Officer	1 from each Block
Accountant	1 from each Block
Nominated Officials	5 from each District

Hired training professionals from NICSI empanelled agencies will provide the training. The identified agencies will nominate a Master trainer, who will be trained by the central NIC team. This Master trainer will subsequently train all the other trainers from his agency.

5.1.3.2.3 Call Centre

A multi-lingual call centre to provide technical troubleshooting support and general queries related to NREGASoft and funds transfer is proposed to be setup at the National level. Initially, for supporting the four identified States, it is proposed to establish a 10-seat call center. Later, when more States take up the implementation the Call Center will be appropriately staffed.

5.1.4 Timelines

Timelines for NIC / NICS activities will be effective post:

- a) Fund transfer to NICS.
- b) Agreement / MoU between State and Bank.

Activities	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20
Consultations with State for operationalizing the program																				
State issue orders for payment through Central Account and all bank Payment Advice to be generated through NREGASoft																				

Activities	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20
Interfacing of NREGASoft with Payment System																				
Selection of Manpower for MoRD																				
Finalization of Rollout Plan with States																				
Duly approved Digital Signatures request forms submission to NIC																				
Issue of Digital Signatures by NIC to States																				

Activities	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20
Selection of Technical Support Staff for States			█	█	█	█	█	█	█											
Selection of Training Agencies from the NICSI empanelled vendors				█	█	█	█	█	█											
Training of identified Master Trainers from the selected empanelled vendors										█	█									
Training of trainers by the Master Trainers										█	█									
Rollout including training in Gujarat												█	█	█	█	█	█	█	█	█

Activities	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20	
Rollout including training in Karnataka																					
Rollout including training in Orissa																					
Rollout including training in Rajasthan																					

5.1.5 Limitations

- The reach of the electronic fund transfer will be limited to those worker accounts, which are held with branches that are core banking enabled.
- Post office and Co-operative bank accounts will not be credited through this system.
- Disbursement of wages by banks at the doorstep of workers will not be addressed by this system.

5.2 Phase-II

In this Phase electronic data capture from the field through the usage of handheld devices will be implemented.

5.2.1 Pre-requisites for the States

The States should:

- Have preferably implemented the Phase I.
- Have mobile networks till GP level in majority of GPs during working hours.

5.2.2 Activities

The following activities will be required for successful implementation of Phase-II in any State:

- Provision of Handheld devices to the Rozgar Sewak or any other authorized individual, who will be taking attendance at the field level.
- Provision of Handheld device to the Engineer, who will be taking the measurements of the works being executed.
- Provision of manpower for technical troubleshooting and handholding support at Block level through an IA.
- Engage the IA through a tender process or through NICSII / State level empanelments.
- Finalize the roll-out plan in consultation with the IA

At the Centre, the following activities will be undertaken:

- Guidance for engaging the IA by helping in finalization of the implementation model..
- Monitoring the implementation of the project across States.
- Development of Android based Handheld application, which would run on both Tablet and Mobile phones.
- Bug-fixing and updates for Handheld application.

5.2.3 Requirements

The requirements for Phase-II will be related to IT Software & Hardware and Capacity Building:

5.2.3.1 IT

The IT requirements are as under:

- Software design and development of Handheld Application.
- Hardware augmentation at the Data Centre.
- Set-up of Bluetooth infrastructure at the Block offices for upload and download of data / software updates.

5.2.3.2 Capacity Building

Capacity building would require provision of suitably skilled manpower at Centre, State, District and Block levels for handholding and technical troubleshooting, training the manpower on the usage of the Application and expanding the Call Centre support at the National level.

5.2.3.2.1 Manpower

At Block level:

It is envisaged that the following manpower will be required at each Block to support the daily operations. This manpower will be hired through the IA / Service Provider.

Table 6: Manpower at Block Level by IA / SP

Level	Number
Operations Manager	1
Operations Assistant	2

At District Level:

It is envisaged that the following manpower will be required at each District carry out the daily operations. This manpower will be hired through the Implementation Agency / Service Provider.

Table 7: Manpower at District Level by IA / SP

Level	Number
Operations Manager	2
Operations Assistant	1

At State Level:

The manpower provided at State level in the SPMU during Phase-I will continue and additional manpower will be required for technical handholding support:

Table 8: Additional Technical Support Staff at each State

Level	Number
Operations Manager	1
Operations Assistant	2

The State NIC will be provided the following manpower for supporting the preparation of state-specific reports on NREGASoft.

Table 9: Technical Staff at State NIC

Level	Number
Developer	1

The Implementation Agency / Service Provider will be required to provision the following manpower at the State level for overall project management and co-ordination with the SPMU.

Table 10: Manpower at State level by the IA / SP

Level	Number
Operations Manager	2
Operations Assistant	2

At Centre:

The CPMU at MoRD will have to be augmented to support the implementation of the Phase-II. In addition to the staff proposed for Phase-I, following staff will be required:

Table 11: Additional Staff in PMU at MoRD

Level	Number
Principal Consultant	1
Senior Consultant	1
Junior Consultant	2
Senior Solution Architect	2
Senior Developers	20

5.2.3.2.2 Training

Training will be required for usage of Handheld Application. This training will need to have a much wider coverage as all the grass-roots level officials need to be trained in

using the application. The recommended approach for training in the selected four States is that of conducting training sessions in two rounds at State level. At each District the following individuals will be trained:

Table 12: Individuals to be trained at District Level

Level	Number
IA Master Trainers	3
NREGS District Project Co-ordinator	1

5.2.4 Timelines

Timelines for NIC / NICS activities will be effective post:

- a) Fund transfer to NICS.
- b) Deployment of manpower from the IA / SP at all three levels viz. State, District & Block.
- c) Identification and nomination of Master Trainers from the IA / SP, who need to be trained on the usage of Handheld Application.

Activities	M1	M2	M3	M4	M5	M6	W25	W26	W27	W28	W29	W30	W31	W32	W33	W34	W35	W36	W37	W38
Design and development of Handheld Application																				
State procures handheld devices and Bluetooth dongles.																				
Resource mobilization by IA / SP.																				

<p>IA / SP identifies Master trainers.</p>									
<p>Faculty provided to train the Master trainers of IA / SP by the NICSI empanelled training agencies at State HQ</p>									
<p>Master trainers train the Technical Support Staff to be deployed at the Block level</p>									
<p>Technical support staff deployed at Block Level</p>									
<p>Technical support staff</p>									

<p>sets up / configures the Block level IT infrastructure and prepares the handheld devices.</p>		
<p>Ongoing training and handholding support by Block level staff</p>		

5.2.5 Limitations

- The system will not be able to authenticate the identity of a person.
- This system will not be able to replace the paper muster roll.
- This system may not be able to eliminate the the grassroots level malpractices such as muster roll fudging.

6 Roles & Responsibilities

A clear understanding of the roles and responsibilities of each of the stakeholders is crucial for implementation of the project.

6.1 Ministry of Rural Development

MoRD will be:

- The overall project sponsor and will issue orders for utilization of funds for the project implementation.
- Responsible for strategic direction and advising States for implementation of the project.
- Empanelling Implementation Agencies / Service Provider for nation wide implementation.
- Responsible for validating the functional requirements of the software application.
- Responsible for monitoring the implementation of the project.

6.2 States' Department of Rural Development

State Department of RD will be:

- The owner for project implementation within their State.
- Responsible for selecting the Implementing Agency / Service Provider from the empanelled agencies.
- Responsible for finalizing the roll-out plan for both Phase-I and Phase-II in consultation with MoRD and the IA.
- Will identify their Key Bank(s) and enter into appropriate Agreement / MoU with them.
- Issue appropriate orders for enabling the use of Digital Signatures, NREGASoft for payment approval.
- Will finalize the training plan in association with the identified NICS I empanelled training agencies and facilitate the trainings for both Phase-I and Phase-II within overall project duration.
- Provide infrastructure of conducting the trainings.

6.3 Banks

Will be responsible for:

- Engaging with NIC for defining a data sharing schema / format for automatic transfer of Fund Transfer Order from NREGASoft.

- Acknowledging the receipt of Fund Transfer Order from NREGASoft on a daily basis.
- Ensuring the fund transfer to beneficiary accounts in a secured and electronic manner.
- Providing confirmation of fund transfer to NREGASoft
- Handling any exceptions e.g. error in fund transfer or failure of fund transfer in a proactive manner by engaging with the State

6.4 Implementation Agency / Service Provider for Handheld Solution

Will be responsible for:

- Installing and maintaining the handheld application on all the devices across the State.
- Position technical resources at Block level for providing handholding support and training on an ongoing basis.
- Data monitoring of attendance and measurement uploaded from the field and intervene over phone or travel to field and ensure upload of data.
- Provide maintenance support for all devices and interact with the device manufacturers for availing warranty / technical support.
- Identifying Master trainers, who will be trained by identified training agencies on usage of applications.

6.5 National Informatics Centre / National Informatics Centre Services Inc.

Will be responsible for:

- Design, development and maintenance of the Banking interface between NREGASoft and Banks for enabling electronic fund transfer and payments.
- Design, development and maintenance of the core Handheld Application to be used on a mobile device to capture attribute data related to Demand, Attendance, and Measurement.
- Undertaking State level enhancements for NREGASoft for analysis and reporting purposes.
- Providing the hosting environment including infrastructure and operations in the Data Centre for hosting the Applications.
- Provide trainers from the NICS empanelled agencies.
- Train the master trainers of the identified training agencies on the NREGASoft and Handheld Application.
- Provide trainers from empanelled agencies and handle the contractual and payment terms with them.
- NIC will be responsible for overall Project Management and NICS will be responsible for Resource Management.

7 Financial Estimates¹

The total project cost is as per the table below. These costs are exclusive of service tax and NICSI administrative charges, which will be chargeable extra. This cost does not include the costs indicated for the IA / SP in the Section 7.2.3.

Total Project Cost	
Phase-I	4.43
Phase-II	5.86
Total (INR Crores)	10.29

The following data has been used for the purpose of cost calculations.

Master Data			
	Districts	Blocks	GP
Rajasthan	33	243	9201
Orissa	30	314	6235
Karnataka	30	176	5631
Gujarat	26	225	14146

7.1 Phase-I Cost

7.1.1 Cost Summary

Item	Cost (INR Lakhs)
IT Cost (One-time)	183.84
Training Cost (One-time)	10.35
Support Manpower - State Cost (Annual)	69.6
CPMU at MoRD (Annual)	143.4
Call Centre (Annual)	36
TA / DA including local travel	10
Total Project Cost (INR Crore)	4.43

7.1.2 Cost Details

NREGASoft Enhancement Development					
Resource Type	Number	Months	Man-months	Man-month Rate	Total (INR)
Project Manager	1	3	3	130000	390000
Solution Architect	1	3	3	145000	435000
Software Designer	1	3	3	85000	255000
Sr. Developer	2	3	6	50000	300000
Developer	4	3	12	35000	420000
			Total		2070000

¹ The rates used in this proposal have been obtained from NICSI empanelment.

The NREGASoft enhancement will be carried out by NIC HQ team as per the above estimate.

Digital Signatures			
	Number	Rate	Total (INR)
Gujarat	502	250	125500
Karnataka	11674	250	2918500
Orrisa	688	250	172000
Rajasthan	552	250	138000
		Total	3354000

In Gujarat, Orissa and Rajasthan two officials from each Block and two officials from each District will be provided Digital Signatures. However, in Karnataka, since the State possesses ICT infrastructure till GP level and operates NREGASoft from GP level, two officials from each GP will also be provided Digital Signatures additionally.

Data Centre Augmentation			
	Number	Rate	Total (INR)
Windows Server 2008 R2 Enterprise	4	90000	360000
SQL Server 2008 R2 Enterprise(4)	4	900000	3600000
BizTalk Server 2010 Enterprise	4	1600000	6400000
High-end Rack Mounted Server	4	650000	2600000
		Total	12960000

The above hardware augmentation will be required at the Data Centre for operationalizing the electronic funds transfer through interfacing with the identified Key Bank(s).

Training			
	Number of Participants	Cost per Participant	Total (INR)
Gujarat	580	412	238960
Karnataka	502	412	206824
Orrisa	778	412	320536
Rajasthan	651	412	268212
		Total	1034532

Two officials from each Block and five nominated officials from each District will be provided training for the usage of Digital Signatures for approving payments. The trainings will be carried out by NICS provided trainers at the State capital.

Support Manpower						
At States	Operations Manager	Man-month Rate	Operations Assistant	Man-month Rate	Annual Cost (INR)	
Gujarat	1	28000	2	16000	720000	
Karnataka	1	28000	2	16000	720000	
Orrisa	1	28000	2	16000	720000	
Rajasthan	1	28000	2	16000	720000	
				Total	2880000	
At State NIC	Senior Developer	Man-month Rate	Developer	Man-month Rate	Annual Cost (INR)	
Gujarat	1	50000	1	35000	1020000	
Karnataka	1	50000	1	35000	1020000	
Orrisa	1	50000	1	35000	1020000	
Rajasthan	1	50000	1	35000	1020000	
				Total	4080000	
At MoRD	Number	Man-month Rate	Annual Cost (INR)			
Principal Consultant	1	245000	2940000			
Senior Consultant	2	200000	4800000			
Junior Consultant	2	150000	3600000			
Senior Solution Architect	2	125000	3000000			
		Total	14340000			

The above manpower will together provide the technical and operational support for project implementation. The Manpower positioned at State will comprise the SPMU and the manpower positioned at MoRD will constitute the CPMU.

Call Centre			
	Number of Agents	Monthly Cost per Agent	Annual Cost (INR)
	10	30000	3600000
		Total	3600000

A call centre with the above staffing will be setup to provide immediate information as well as technical support for NREGASoft.

7.2 Phase-II Cost

7.2.1 Cost Summary

Item	Cost (INR Lakhs)
IT Cost (One-time)	280.25
Training Cost (One-time)	3.92
Support Manpower - State Cost (Annual)	45.6
CPMU at MoRD (Annual)	256.2
TA/DA including local travel	15
Total Project Cost (INR Crore)	5.86

7.2.2 Cost Details

Mobile Application Development					
Resource Type	Number	Months	Man-months	Man-month Rate	Total (INR)
Project Manager	1	2	2	130000	260000
Sr. Solution Architect	1	1	1	195000	195000
Software Designer	1	2	2	85000	170000
Senior Developers	2	5	10	50000	500000
Developers	4	5	20	35000	700000
				Total	1825000

The Mobile Application development will be undertaken at NIC HQ and will require the above estimated effort.

Data Centre Augmentation			
	Number	Rate	Total (INR)
High-end Rack Mounted Server for Handheld App	10	650000	6500000
Windows Server 2008 R2 Enterprise for NREGASoft	6	1600000	9600000
SQL Server 2008 R2 Enterprise(4) for NREGASoft	4	900000	3600000
High-end Rack Mounted Server for NREGASoft	10	650000	6500000
		Total	26200000

Owing to the transactional nature of the application the load on the NREGASoft is expected to increase, which would require additional servers. Also, servers will be required for hosting the Mobile Application as detailed above.

Training			
	Number of Participants	Cost per Participant	Total (INR)
Gujarat	208	412	85696
Karnataka	240	412	98880
Orrisa	240	412	98880
Rajasthan	264	412	108768
		Total	392224

Training would be provided to four identified Master Trainers from the Implementation Agency / Service Provider. This training will be carried out in two rounds at the State capital by NICS provided trainers.

Support Manpower					
At States	Operations Manager	Man-month Rate	Operations Assistant	Man-month Rate	Annual Cost (INR)
Gujarat	1	28000	2	16000	720000
Karnataka	1	28000	2	16000	720000
Orrisa	1	28000	2	16000	720000
Rajasthan	1	28000	2	16000	720000
				Total	2880000
At State NIC	Developers	Man-month Rate	Annual Cost (INR)		
Gujarat	1	35000	420000		
Karnataka	1	35000	420000		
Orrisa	1	35000	420000		
Rajasthan	1	35000	420000		
		Total	1680000		
At MoRD	Number	Man-month Rate	Annual Cost (INR)		
Principal Consultant	1	245000	2940000		
Senior Consultant	1	200000	2400000		
Junior Consultant	2	150000	3600000		
Senior Solution Architect	2	195000	4680000		
Senior Developers	20	50000	12000000		
		Total	25620000		

In addition to the manpower positioned during Phase-I, the above manpower would be required at State and MoRD level to augment the SPMU and CPMU.

7.2.3 Indicative Cost of IA / SP

This cost will be borne by State or MoRD and will be paid directly to the IA / SP. These are only indicative costs; the actual costs will have to be discovered through the empanelment process to be undertaken by MoRD. This indicative cost is not included as a part of the NIC / NICS I proposal. This has been included to give a broad idea of the expected cost to be incurred towards engagement of the IA / SP and should not be construed as a commitment from NIC / NICS I.

The details of this cost are as under:

Level	State Level	Rate	District Level	Rate	Block Level	Rate
Operations Manager	1	28000		28000		28000
Operations Assistant	1	16000	2	16000		16000
Block Assistant					2	10000
	State Level Cost (INR Lakhs)	21.12	District Level Cost (INR Lakhs)	456.96	Block Level Cost (INR Lakhs)	2299.2

As per the requirements stated for Phase-II the above costs are expected to be incurred on the manpower support through an IA / SP. 1 Operations Manager and 1 Operations Assistant will be required at the State level, 1 Operations Manager and 1 Operations Assistant will be required at the District level and 2 Block Assistants will be required at the Block level.

Device Cost						
State	Item	Number	Unit Cost	Item	Unit Cost	Total Cost (INR)
Gujarat	Handheld (Mobile or Tablet)	28292	3500	Bluetooth Dongle	300	99089500
Karnataka	Handheld (Mobile or Tablet)	11262	3500	Bluetooth Dongle	300	39469800
Orissa	Handheld (Mobile or Tablet)	12470	3500	Bluetooth Dongle	300	43739200
Rajasthan	Handheld (Mobile or Tablet)	18402	3500	Bluetooth Dongle	300	64479900
					Total (INR Crores)	24.68

The State may procure the devices from the IA / SP or may procure it directly. A minimum of two handheld devices will be required at each GP and one Bluetooth dongle will be required at each Block.

Operational Expenses			
State	Item	Monthly Cost (INR)	Annual Cost
Gujarat	Monthly Mobile bill+ Maintenance per User	500	169752000
Karnataka	Monthly Mobile bill+ Maintenance per User	500	67572000
Orissa	Monthly Mobile bill+ Maintenance per User	500	74820000
Rajasthan	Monthly Mobile bill+ Maintenance per User	500	110412000
		Total (INR Crores)	42.26

These are the expected operational expenses.

8 Project Outputs

The following are the two most important outputs of this project:

- Seamless payment mechanism which automatically ensures fund transfer and crediting of workers' accounts.
- Fast field-level data capture, which will eventually lead to real-time availability of data at all levels of governance.

9 Miscellaneous

- NIC will hold the copyright to all the technical artifacts produced under this project and will maintain & modify these artifacts as and when required.
- Data / Content Management – The MoRD and the State Governments will be responsible for collecting, compiling, entering and updating the data and effectively utilizing the software package.
- In case of any dispute relating to this Project, it shall be resolved amicably by mutual consultations among the concerned stakeholders. In the event of no agreement, or if such resolution is not possible, then the unresolved dispute or difference shall be referred by the concerned Parties to Secretary, MoRD and DG, NIC. The dispute shall be resolved by mutual negotiations by and between Secretary, MoRD and DG, NIC or their authorized representatives and their unanimous decision shall be final and binding on all concerned.