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## **1. BACKGROUND**

### **1.1 PROJECT BACKGROUND**

The Ministry of Home Affairs has conceptualized the Crime & Criminals Tracking Network and Systems (CCTNS) project as a Mission Mode Project under the National e-Governance Plan (NeGP). This is an effort of the Government of India to modernize the police force giving top priority to enhancing outcomes in the areas of Crime Investigation and Criminals Detection, in information gathering, and its dissemination among various police organizations and units across the country, and in enhancing Citizen Services.

CCTNS aims at creating a comprehensive and integrated system for enhancing the efficiency and effective policing at all levels and especially at the Police Station level through adoption of principles of e-Governance, and creation of a nationwide networked infrastructure for evolution of IT-enabled state-of-the-art tracking system.

The scope of CCTNS spans all 35 States and Union Territories and covers all Police Stations (14,000+ in number) and all Higher Police Offices (6,000+ in number) in the country. The CCTNS project includes vertical connectivity of police units (linking police units at various levels within the States – police stations, district police offices, state headquarters, SCRB and other police formations – and States, through state headquarters and SCRB, to NCRB at GOI level) as well as horizontal connectivity, linking police functions at State and Central level to external entities. CCTNS also provides for a citizen’s interface to provide basic services to citizens.

### **1.2 CCTNS IMPLEMENTATION FRAMEWORK**

CCTNS would be implemented in a way where the States and UTs play a major role. CCTNS would be implemented in alignment with the NeGP principle of “centralized planning and de-centralized implementation”. MHA and NCRB would play a key role in planning the program in collaboration with the Police leadership within States, in the

development of a few core components and in monitoring and reviewing the program. It is, however, the States and UTs that would drive the planning and implementation at the State level.

The role of the Centre (MHA and NCRB) focuses primarily around planning, providing the core application software (to be configured, customized, enhanced and deployed in States), providing guidelines and monitoring the program. States would drive the implementation at the state level and would continue to own the system after deployment.

The implementation of CCTNS would be taking an “integrated service delivery” approach rather than that of procurement of hardware and software. The central feature of CCTNS implementation at the State level is the “bundling of services” concept. According to this, each State selects a System Integrator (SI) who would be the single point of contact for the State for all the components of CCTNS. These components include the application, hardware, communications infrastructure, and associated services such as Capacity Building and Handholding. States will be provided a Core Application Software which can be configured and customized to the specific requirements of the State and deployed at the States by the State Level System Integrator. The System Integrator will further build the functionality required to cater for the additional services at the State.

### **1.3 NEED FOR STATE PROJECT MANAGEMENT CONSULTANT (SPMC)**

In order for state governments to plan and implement CCTNS in their own states, each State is expected to constitute appropriate governance and operations structures, and in alignment with the structures recommended by DIT, GOI under NeGP guidelines.

The following governance committees shall review progress, implementation, rollout, shall monitor utilization of funds and issue Policy Directions/Guidelines for CCTNS project.

1. State Apex Committee
2. State Empowered Committee
3. State Mission Team
4. District Mission Team

While the governance structure at the State can provide the overall guidance and monitor the implementation, there is a key need to provide the committees with an operational team that can work closely with State to provide the much needed technical and operational support prior to and during implementation.

The State can take the assistance of the operational team for preparing / customizing the DPR and RFP to meet the unique needs of the State based on the guidelines provided from the Center. The operational team can also aid in the bid process of the System Integrator selection through providing the technical guidance required for evaluating the technical proposals of the bidders.

During the development and roll-out of the project in the State, the operational team can assist the State in validating the deliverables submitted by the SI and ensuring that the SI is developing the solution and deploying the associated infrastructure and services in conformance with the requirements provided in the RFP. Post roll-out the operational team can support in monitoring the performance of the SI through service level monitoring and provide the proactive inputs to State as well as the SI to ensure that the implementation results in the desired objectives of the CCTNS scheme.

A State Project Management Consultant (SPMC) and State Program Management Unit (SPMU) can bring in the external technical as well as Project Management expertise to ensure the success of the implementation. While the SPMC can assist the State in preparing the Detailed Project Report and Request for Proposal and the Selection of System Integrator, the SPMU can provide the required support once the System Integrator is on board. It is proposed that the same consulting agency be selected to act as the SPMC and continue in the role of SPMU to ensure the continuity and provide assistance to the State. Henceforth in this document, only SPMC is used that refers to the Consulting Agency that will provide support both as SPMC and SPMU.

## **2. GUIDELINES FOR STATE PROJECT MANAGEMENT CONSULTANT**

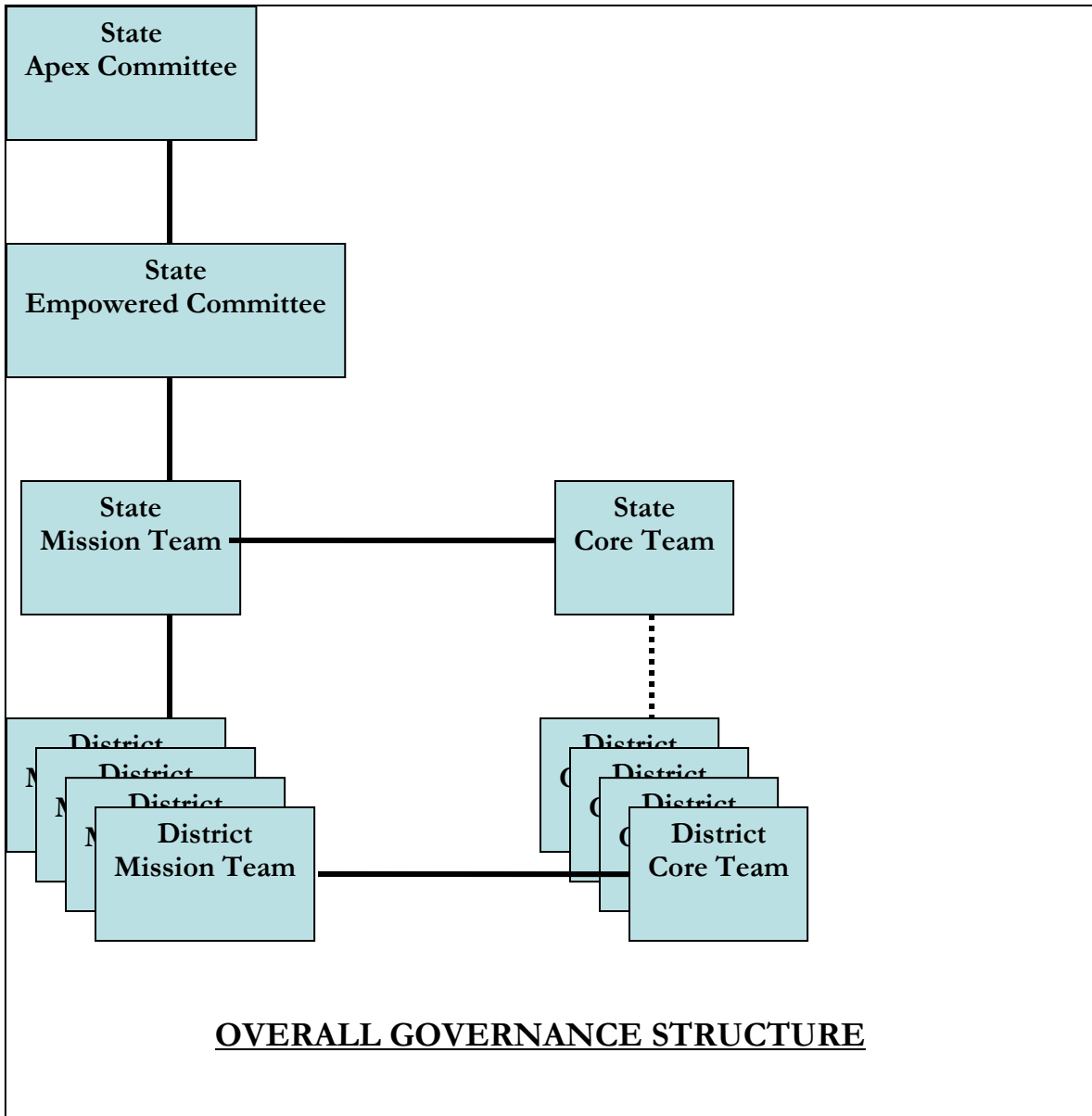
### **2.1 GOVERNANCE STRUCTURE**

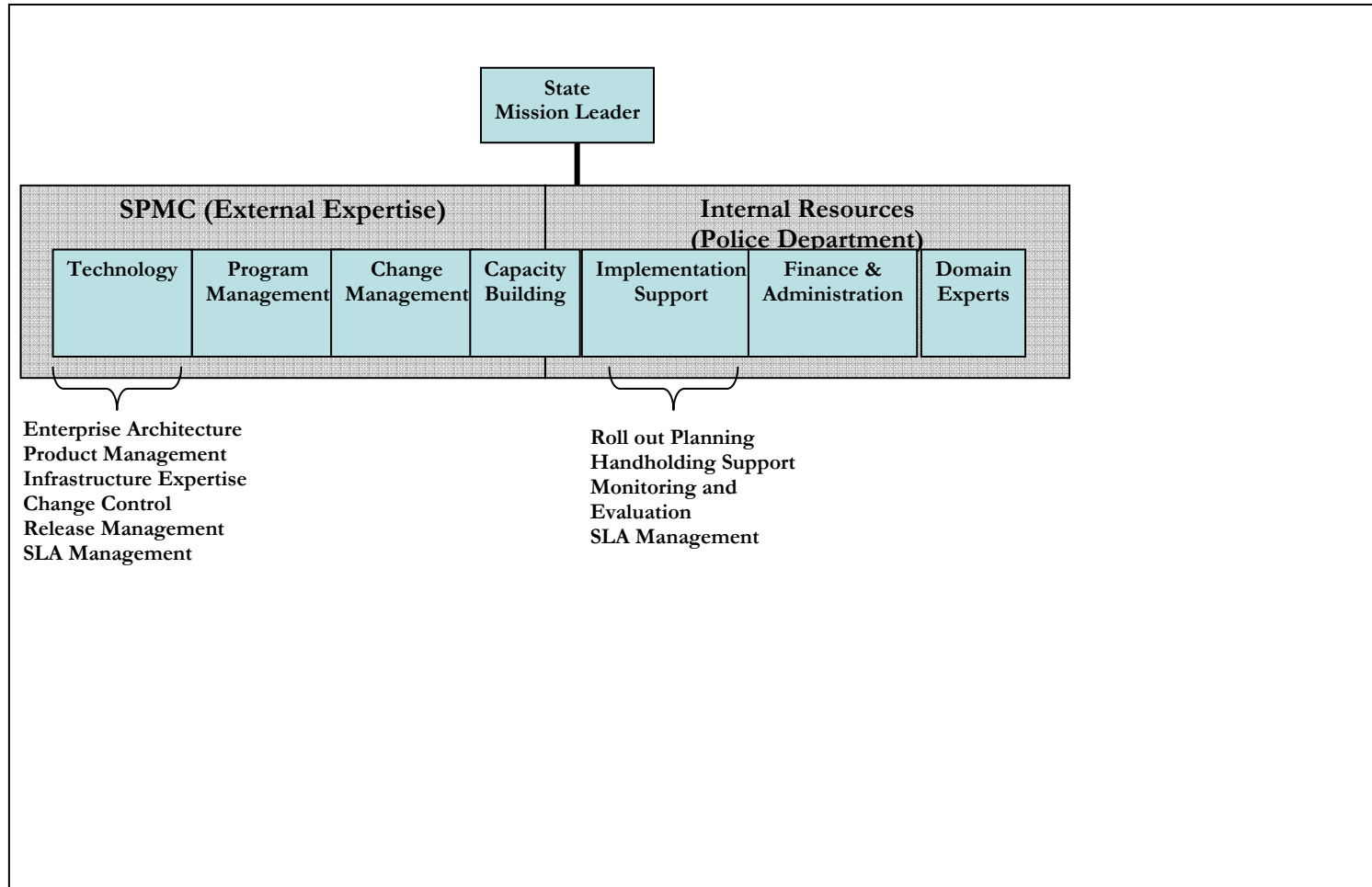
As illustrated below, SPMC works along with the internal domain and implementation experts from the Police Department as part of the State Core Team to provide operational support to the State Mission Team. Over a period of time, State has to build the internal capacity to monitor the implementation through deploying additional internal resources in the State Core Team. The State Core Team shall have resources dedicated to monitor the implementation in the Districts.

District Core Teams, one for each District has to be setup to provide the end user support at the cutting edge in the Police Stations and provide operational support to the District Mission Team. The District Core Teams shall be formed from the internal resources of the Police Department. The State Core Team shall liaison with the District Core Teams to provide implementation support and collate regular feedback from the end users.

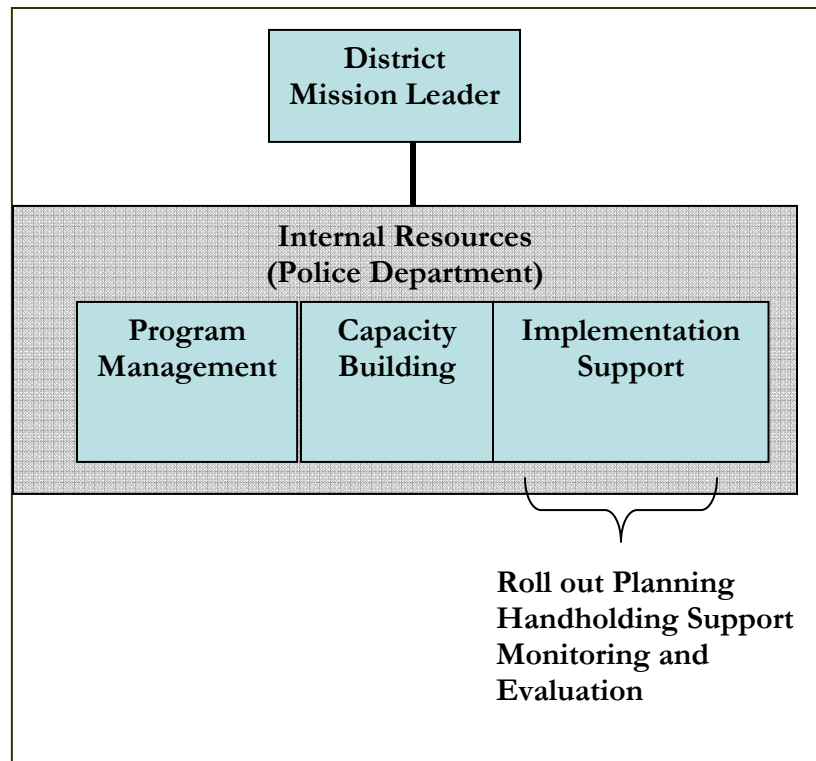
The State Core Team along with the District Core Teams shall carry out the monitoring and evaluation of the scheme at regular intervals to assess the uptake of the solution and provide recommendations to the State Mission Team and the System Integrator for continuous improvement of the implemented solution and services.

The State shall deploy the resources in the Core Teams based on the size of the State and number of Districts.





**STATE CORE TEAM**



### DISTRICT CORE TEAM

## 2.2 ROLES AND RESPONSIBILITIES OF THE STATE

The State shall be responsible for the following activities required for the successful implementation of the CCTNS project:

- a. Provide domain experts
- b. Provide office space for the SPMC in the State Headquarters that facilitates continuous interactions with the domain experts and key stakeholders
- c. Identify the skilled internal resources and create a State Core Team to support the State Mission Team
- d. Identify the skilled internal resources and create District Core Teams in each district to support the District Mission Teams
- e. Owning the core and critical assets of the Project and exercising strategic control over the project;
- f. Review the performance of the SPMC

- g. Review and approve deliverables, ensure achievement of milestones, timely sign-offs etc.
- h. Facilitate policy decisions required for successful implementation of the project
- i. Facilitate Change Management efforts by issuing of circulars, instructions, etc., adoption of reengineered processes and such other matters as may be necessary from time to time.
- j. Coordinate with the Ministry of Home Affairs, National Crime Records Bureau, and other external agencies at State and Center for any interfacing requirements.
- k. Facilitate the communications and awareness programs that will be conducted by the SI

### **2.3 SCOPE OF WORK FOR SPMC**

A State Project Management Consultant can provide the required operational support in three distinct phases:

**Phase I: DPR, RPF Preparation and Bid Process Management for Selection of System Integrator**

**Phase II: Support during Implementation Stage**

**Phase III: Support during Post Implementation Stage**

**Phase I: DPR, RPF Preparation and Bid Process Management for Selection of System Integrator**

- a. Process Study to identify the unique requirements of the State and document the configuration and customization requirements on the Core Application provided by the Center
- b. Study the additional services that the State plans to implement through CCTNS and document the processes and functional / technical requirements for the required IT solutions
- c. Study the existing systems and recommend on the integration with the new solutions
- d. Preparation of the DPR based on the guidelines from the Center
  - i. Design of the solution
  - ii. Financial estimates of the solution and associated services

- iii. Rollout Plan in the State
- iv. Customize the model DPR to the State requirements
- e. Preparation of the Expression of Interest (EOI) and Request for Proposal (RFP) based on the guidelines from the Center
  - i. Collect the State Specific Information (existing IT systems, infrastructure, organization structure, personnel for capacity building, ....) required for the SI
  - ii. Customize the model RFP to the State requirements
- f. Providing guidance to the State and prepare any required notifications, correspondence, clarifications, reports to the Center as and when required during the DPR and RFP approvals by the Center
- g. Assist the State in Bid Process Management
  - i. Evaluating the bidders' Expression of Interest Proposals
  - ii. Compiling the EOI evaluation report based on the Pre-qualification evaluation and short listing the pre-qualified bidders
  - iii. Release of the RFP to the pre-qualified bidders
  - iv. Compiling response to bid queries and clarifications
  - v. Managing Pre-bid conference
  - vi. Technical evaluation
  - vii. Evaluation of "proof of concept" where necessary
  - viii. Compiling technical evaluation report and Recommending "the best value" bid
  - ix. Assist State in design and vetting of the contract with the selected System Integrator

### **Phase II: Support during Implementation Stage**

Once the System Integrator is selected by the State, the SI will initiate the system study and development of the solution through a well defined software development process, commission the infrastructure (client side, server side, and network infrastructure), migrate and digitize the required data and files, provide the necessary training and change management, and provide handholding support to the end users Through out the implementation stage, the SI will provide several deliverables for the validation and approval

of the State. The SPMC will be expected to review the deliverables and the traceability to the requirements given in the RFP to ensure that the solution is being implemented as per the RFP.

The SPMC would provide support to the State till “Go Live” Stage wherein “Go Live” defined as the milestone when the SI has successfully implemented the solution and the associated infrastructure and services to the satisfaction of the State specifically in the areas of:

- a. Overall Project Management and Coordination including identification and implementation of the appropriate project management tools
- b. Review of the deliverables provided by the SI and support the State in the approval of the deliverables. The actual list of the deliverables will be provided by the SI. An indicative list is provided below:
  - i. Project Plan, System Requirements Specifications, Solution Architecture and Design, Infrastructure Capacity Planning, Test Plans, Change Management and Capacity Building Plans, Data Digitization and Migration Plan, Validation of the final testing of the application before roll-out to the end users
- c. Conducting formal project meetings, and meetings with project stakeholders
- d. Providing guidance and clarifications to SI as and when required
- e. Ensure that the application system has been designed and developed in exact conformance to the specifications and design and architecture standards
- f. Regular IT Audits to ensure the code and documentation standards are followed
- g. Support in Release and Version Management of the solution
- h. Preparation of all project reports e.g. quarterly progress reports, annual project report, inception report, and ad-hoc technical reports
- i. Interact frequently with the District Core Teams and end users and channel the feedback to the SI for continuous improvements in the solution and implementation methodology
- j. Exercising a Strategic Control over the core and critical assets of the project.
- k. Overseeing Acceptance Testing and Go-Live readiness

### **Phase III: Support during Post Implementation Stage**

After the implementation of the solution and the associated services, the SI is expected to provide operations and maintenance support, wherein the SI will provide the handholding support to support the end users use the solution, application functional support to support the end users' requests and fix any issues / defects incidental to use the solution, and warranty and AMC services to maintain the solution and infrastructure at the service levels indicated in the RFP.

The SPMC can provide support during the Post Implementation Stage through:

- a. Monitor Service Levels to ensure satisfied end-user and the continuous usage of the application. The service levels will be broadly based on:
  - i. Application Uptake
  - ii. Effectiveness of training and change management
  - iii. Application Performance and Availability
  - iv. Infrastructure Performance and Availability
  - v. Effectiveness of end user handholding support
  - vi. Responsiveness of the SI with respect to application and infrastructure maintenance and support
- b. Change Control to manage the changes and patches on the application and infrastructure going into the production environment and identify the required enhancements that need to be built into the subsequent versions of the solution
- c. Conducting formal project meetings, and meetings with project stakeholders
- d. Interact frequently with the District Core Teams and end users and channel the feedback to the SI for continuous improvements in the solution and implementation methodology
- e. Overseeing the communications and awareness campaign for enhancing the usage of the application across the state
- f. Monitoring and evaluation of the outcomes and provide feedback to the State and SI to take corrective actions where necessary

- g. Monitor SLA compliance and advise State/UT on the payment decisions arising thereof

## 2.4 KEY PROFILE REQUIREMENTS

The key expertise required for the SPMC would vary from phase to phase as illustrated in the diagram below:

Phase I: Post Impl Support	<ol style="list-style-type: none"> <li>1. Program Management</li> <li>2. SLA Monitoring</li> <li>3. Feedback Assessment</li> <li>4. Change Control and Release Management</li> </ol>
Phase II: Impl Support	<ol style="list-style-type: none"> <li>1. Program Management</li> <li>2. Solution and Technology Architect</li> <li>3. Product Management with Change Control Expertise</li> <li>4. Infrastructure Assessment Expertise</li> <li>5. Change Management and Capacity Building Expertise</li> </ol>
Phase I: Selection of SI	<ol style="list-style-type: none"> <li>1. Process Study</li> <li>2. Solution Design</li> <li>3. Functional and Technical Requirements Preparation</li> <li>4. Financial Estimation</li> <li>5. DPR Preparation</li> <li>6. RFP Preparation</li> <li>7. Bid Process Management Expertise</li> </ol>

During the Phase I (Selection of System Integrator), resources would be required to conduct the process study and document the processes and solution functional and technical requirements. Expertise would be required in preparation of the Detailed Project Reports and Request for Proposals.

During the Phase II (Implementation Support), resources would be required to provide the technical and change management inputs to the State and validate the deliverables from the System Integrator. Resources with change control and release management expertise would also be required during the final stages of this phase in order to manage the scope and deliver a quality solution within the timelines.

During the Phase III (Post Implementation Support), resources would be required to manage any additional changes going into the solution, collate the feedback from the end-users on the implemented solution and associated services and provide the feedback to the State and SI for improvements in the solution delivery, and monitor the service levels of the System Integrator.

The key personnel within the SPMC should meet the following minimum profile requirements. While some of the resources will have to be deployed on a fulltime basis, a few of the expert resources such as resources with Enterprise / Solution Architecture expertise can be deployed on an as-needed basis.

## **Product Manager with Change Control and Release Management Expertise**

### **Qualification**

- a. Masters Degree
- b. 12+ years of experience

### **Job requirements and Experience**

- a. Experience in full life cycle implementation of at least one e-governance project
- b. Preference will be given to those who have at least 3 years of working in a government department or a PSU
- c. Experience in interacting with both business and technology teams
- d. Experience as a product manager and must have worked in large scale software development projects with multiple phases and multiple versions of application
- e. Has successfully managed timelines, on-budget delivery and quality of large scale implementation
- f. Has a good grasp of technology and tools with capability to give inputs on technology and tools
- g. Managing the change requests and change control processes
- h. Must have demonstrated the following Project Management skills:
  - a. Effort and timeline estimation skills
  - b. Negotiation skills

- c. People Management skills
- d. Risk analysis and mitigation
- i. Must have demonstrated an ability to quickly grasp new business domains and led projects in several business domains
- j. Has excellent understanding of Quality and Process frameworks

## **Technology Manager with Enterprise / Solution Architecture Expertise**

### **Qualification**

- a. Masters Degree in Computer Science or Engineering
- b. 8+ years of experience with at least three years as a Technology Architect in multiple full life cycle software development projects
- c. Certified as an Architect

### **Job requirements and Experience**

- a. 8+ years of experience primarily in the technologies chosen for the application
- b. Should have architected and implemented a solution for at least one project in Government or a PSU
- c. Conversant with Technology Platforms such as J2EE, Dot Net, XML etc.
- d. Conversant with the latest technological developments including SOA and Agile Methodologies
- e. Conversant with platforms, tools and frameworks used in application development
- f. Ability to interface with customers on the architecture and design aspects of the project
- g. Experience on the use of software development best practices, tools and technologies.
- h. Experience in Conducting Architectural & Design Reviews
- i. Ability to identify the Co-existence and Interoperability Requirements
- j. Experience to Identify performance, reliability, security & integration bottlenecks and suggest recommendations
- k. Expertise in Software Design and Architecture (technologies chosen)

- l. Strong experience in application of UML, Design Patterns in design and architecting of solutions
- m. Ability to apply design concepts, layered architectures, components, interfaces, messaging and patterns
- n. Strong business/technology decision making skills
- o. Strong written and oral communications skills.
- p. Should be able to present the solution to client.

## **Technology Manager with Infrastructure Expertise**

### **Qualification**

- a. B.Tech in Computer Science or MCA or equivalent
- b. 6+ years of experience in IT infrastructure capacity planning and hardware deployment

### **Job requirements and Experience**

- a. Experience in monitoring and tuning of hardware including client side, server side, and network infrastructure
- b. Good understanding of infrastructure related service levels and ability to monitor and analyze the service levels
- c. Experience in large scale deployment with dispersed deployment sites
- d. Experience in application deployment and stabilization phases
- e. Experience in infrastructure assessment
- f. Experience in projects with Government or PSU is preferred
- g. Providing inputs on technology, standards and their evaluation
- h. Coordinate development and monitor compliance with standards and guidelines in the areas of network & information security, meta data and data standards for application domains, localization & language, e-Governance architectures etc
- i. Assess IT Infrastructure needs, usage and utilization
- j. Audit the application processes and their compliance with standards and RFP

- k. Management of Vulnerability Assessment, Penetration Testing and Application security
- l. Inputs into DPR and RFP on the items related with the technology
- m. Well versed with all the latest technology developments and their implications to businesses
- n. Desirable to have experience in designing and monitoring of Data Centre, Gateways and networking
- o. Experience in eGovernance projects is preferred

## **Manager with Change Management and Capacity Building Expertise**

### **Qualification**

- a. MBA with focus on Change Management
- b. 8+ years of experience
- c. Desirable to have additional certification or training in e-Governance, change management, change psychology or mass communication

### **Job requirements and Experience**

- a. A dynamic and self-starting individual to champion the process re-engineering, project monitoring, change management and communication campaigns.
- b. Formulating, implementing, monitoring and evaluation of programmes and projects
- c. Conceptualizing, designing and implementing intra-organizational campaigns, change management initiatives
- d. Conceptualizing, designing and managing the policy and strategy interventions for putting in place a cutting-edge framework for capacity building and change management.
- e. Create a framework for assessing the effectiveness of the campaigns and interventions, collect and present the data and project the outcomes
- f. Knowledge of e-government programmes and major e-government initiatives in India or elsewhere

- g. Knowledge of IT in promoting e-government, ability to comprehend technology products, applications and frameworks in the context of e-government in India or elsewhere
- h. Ability to tailor the communication to the various channels and tools already available, and bring them in tune with the organization culture
- i. Ability to monitor programmes, drive capacity initiatives
- j. Managing Change Management initiatives
- k. Experienced in planning events and managing them
- l. Experience in technology and service intensive organizations undergoing significant transformation
- m. Knowledge of e-government programmes

## **Program Manager**

### **Qualification**

- a. B.E / B. Tech / MCA / MBA
- b. 6+ years of experience in IT project management

### **Job requirements and Experience**

- a. Experience in large scale IT project management
- b. Experience in project coordination, status monitoring and reporting, tracking risks and issues, etc
- c. Experience in preparing project presentations, reports, etc
- d. Experience in coordinating with multiple stakeholders, conducting project workshops, meetings, etc (Government experience is desirable)
- e. Exposure to technologies such as SOA/ Web Services, Data Center, Networking, Storage, Database, Security, etc desirable
- f. Experience in collecting and analyzing end user feedback
- g. Excellent interpersonal / communication skills
- h. Experience in projects with Government or PSU is preferred
- i. To provide inputs for project monitoring and implement tools for it

- j. Use a Program Management Tool to analyse the progress and outcomes of Programme and provide dash-board view of progress and issues
- k. Manage multiple end to end program issues with the objective of achieving the timely completion and Quality of the program