

E-GOVERNANCE

MISSION MODE PROJECT (MMP)

CRIME AND CRIMINAL TRACKING NETWORK & SYSTEMS

RFP FOR SELECTION OF SYSTEM INTEGRATOR

ANNEXURE VII

ACCEPTANCE TEST PROCEDURES

RELEASED BY:



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Annexure: 7 Acceptance Testing Procedures

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1 Acceptance Testing Procedure

Acceptance testing is an essential part of software implementation project. It is at this stage that the user is to test and accept individual items as also the entire system. The primary goal of Acceptance Testing is to ensure that the CAS solution implemented as part of the project (including all the systems, deliverables and services) meets the pre-defined requirements/ specifications for functionalities, performance and security. This is ensured by defining clear, quantifiable metrics for accountability for each of the following

- IT Infrastructure including network connectivity & hardware components
- Application and integration with other IT systems
- Project documentation

The Delhi Police Project Management Team (PMT) along with any other external agency appointed by Delhi Police, will carry out the acceptance testing. Such an involvement of an external agency shall not, however, absolve the fundamental responsibility of the SI of designing, developing, installing, testing & commissioning the various components of the project to deliver the services in perfect conformity with the requirements stated in the RFP & the requisite SLAs.

The representative of the SI may be present during the acceptance testing & even in case he is not present, the acceptance testing proceedings will be binding on the SI and the corrections/ modifications suggested should be carried out by the SI. The Delhi Police PMT will ensure that it will commence acceptance testing expeditiously & complete it at the earliest once the system/ document is provided by the SI for acceptance. The mutually agreed time frames for completion of the Acceptance Testing are to be laid down & adhered to. If certain minor problems persist, the Delhi Police PMT may proceed with the Acceptance Testing & make mention of the same in the ATP proceedings. The balance can be pursued subsequently and a supplementary ATP can be carried out.

The different acceptance tests & the acceptance criteria to be adopted are mentioned below:

1.1 IT Infrastructure including Network connectivity & hardware components

The Selected Bidder shall finalize an Acceptance Test schedule at least 15 days in advance of offer for acceptance testing in consultation with Delhi Police. He shall also clearly indicate the specifications clause(s) verified by each test. The Acceptance Test schedule shall be exhaustive based on the specifications and will generally cover the following:

- Hardware and network equipment testing before commissioning
- Check on data cabling, electrical cabling and other wiring
- On-site validation of Hardware, network equipment & other stores at the DC locations
- Setting up of the test environment
- Functional test on individual equipment, network, software, reporting etc as per specifications
- System and/or integration test on solution as a whole
- Capacity/ Load test
- 100% traffic trials on the network.
- Data updating at DR site with incremental update as well as flush update.
- Switch over from main site to DR site, backup, high availability and fallback on N+ 1 server.
- Intrusion detection and security preparation test
- Operation of help desk
- User acceptance testing with parallel run

1.2 Partial Acceptance Test

1.2.1 Site Preparation Acceptance

Delhi Police or any external agency appointed by Delhi Police shall perform the site acceptance testing to ensure that DC Site at respective locations which includes installation of hardware, quality and completeness of cabling (both networking, electrical), environment control etc is in compliance with the specifications/ requirements of the project. Any deviations/gaps identified in the site preparation acceptance will have impact on the payments to be made to the SI.

1.2.2 Infrastructure Compliance Review

On receipt of hardware delivered by the SI, Delhi Police or any external agency appointed by Delhi Police will physically check all packages & boxes to check that the items are received as against the quantities & specifications indicated by the SI in its Proposal. All System software being provided must be the latest & complete with all manuals. They must include the licenses, media (CD ROM) and certificate of authenticity. On establishment of the network, installation & integration of the various components of the networks, Delhi Police or any external agency appointed by Delhi Police will carry out acceptance testing of the network/ integrated system to verify the conformity of the performance against the requirements and specifications provided in the RFP and/or as proposed in the proposal submitted by SI. A burnout test for the servers shall be carried out for 72 hrs.

1.2.3 Existing Application Server Hosting

SI shall move, install & commission the existing servers, if any, present at existing Data center and integrate the network so that CAS application and other existing applications are available to all Delhi Police users across different locations

1.3 Final Acceptance Testing

Pre- requisites of Final Acceptance shall have the following:

- Installation & commissioning of all hardware, software supplied under this RFP including deployment of NMS , EMS , Helpdesk software
- DR site is available for testing the application when DC is brought down
- All documentation related to Delhi Police and relevant acceptance test document (including IT Components, non IT components).
- Installation and commissioning shall include:
 - Installation and Commissioning of IT, non – IT components across Delhi police offices / Client sites and at DC & DR Site
- For both IT & Non-IT equipments / software manuals / brochures / Data Sheets / CD / DVD / media for all the Delhi Police supplied components
- All hardware and software items must be installed and commissioned at DC & DR site as per the specification.
- Availability of all the defined services shall be verified and mutually agreed between Delhi Police and the successful bidder
- The SI shall be required to demonstrate all the features / facilities / functionalities as mentioned in the RFP.

1.4 Integration testing

After the entire development cycle is over, all the components have to be tested end to end. System Integrated Testing (SIT) would be done. Here SI has to demonstrate the system in a controlled production environment. The SI will carry out the Integration testing to ensure the integration of all the locations with the DC and DR site. The SI will submit the Test plan, Test cases & the Test Data prior to carrying out the Integration test. The test plan will include the expected results. After the test, the SI will submit the test results which would be used to compare the actual observed results recorded during the test against the expected results. The observations/ shortfalls/ errors detected will be rectified by the SI. The integration testing shall include establishment of network connectivity at all the locations and integration with the DC and DR Site. This phase will include at least the following activities:

- Test Planning
- Test Data Preparation – while SI can state the test data requirement, Delhi Police will assist in defining the criteria for creation of dummy test data or actual data wherever possible.
- Integration Test Environment Setup in accordance with Technical Architecture Blueprint
- Integration testing (verification of features, inter-operability, application performance, conformance to architecture document, conformance to operations procedures & documentation). Architecture document shall be prepared by SI and submitted to Delhi Police for approval.
- Mock User Acceptance Test
- Mock Parallel Runs
- Problem Resolution

1.5 Enterprise Management System

Delhi Police or any other external agency appointed by Delhi Police shall verify the Enterprise Management System (EMS) implemented by the SI to check if it meets the requirements such as remote monitoring, administration, configuration, inventory management, fault identification etc. Delhi Police or any external agency appointed by Delhi Police shall also verify the accuracy and completeness of the information captured by the SLA monitoring system implemented by the SI. The EMS deployed for Delhi Police, based on SLAs, shall be configured by SI to calculate the installment to be paid by Delhi Police after deducting the necessary penalties. SI shall also install & commission the Helpdesk System

1.6 User Acceptance Test

For conducting the User Acceptance Testing, Delhi Police shall identify the employees from respective divisions/units/verticals, who shall be responsible for day-to-day operations of the functions automated through the CAS solution. The system should necessarily satisfy the user acceptance testing process. The CAS solution Implemented/customized by SI shall be reviewed and verified, against the Functional & Technical Requirements signed-off between Delhi Police and SI. Any gaps, identified as severe or critical in nature, shall be addressed by SI immediately prior to Go-live of the solution. One of the key inputs for this testing shall be the traceability matrix to be developed by the SI for CAS solution. Apart from traceability matrix, SI may develop its own testing plans for validation of compliance of system against the defined requirements.

1.7 Performance Review

Performance is another key requirement for the project and Delhi Police or any external agency appointed by Delhi Police shall review the performance of the deployed solution against certain key parameters defined in SLA. Such parameters include request-response time, work-flow processing time, concurrent sessions supported by the system, disaster recovery drill etc. The performance review also includes full load/ stress test using suitable simulation tools prior to Go Live once the integration test has

been successfully completed. The CAS system would be considered ready to Go Live on successful completion of load/ stress testing

The bidder shall make available the software programs and testers required for carrying out the acceptance tests as per the schedule. Any additional test equipment deemed required during validation shall be arranged by the bidder at no cost to Delhi Police, so as to complete the validation as per the specified time schedule in this document. The bidder shall indicate whether the software package includes programs for testing the Data Center under full load conditions and overload conditions by creation of artificial data in consultation with Delhi Police. Such test program shall be provided by the bidder for the limited purpose of testing.

Delhi Police or any external agency appointed by Delhi Police may carry out all the tests detailed in the acceptance test schedule to confirm that the performance of the different modules, subsystems, and entire installation satisfies the specified requirement of specifications including service performance

Any deficiency found during validation in performance of the system as per the requirement shall be rectified by the bidder immediately at all the locations. Any components or modules failing during the acceptance tests or requiring alterations necessary to meet specification requirements shall be replaced at no extra cost to the Purchaser at site by the Selected Bidder in consultation with Delhi Police . These shall be shipped within two weeks of the initial reports.

1.8 Security Audit of the IT Infrastructure

The SI is also required to conduct security audit of the entire IT infrastructure carried out by the third party other than the selected bidder and should be carried out before the Operational go-live of the entire system.

2 CAS Application and integration with other IT Systems

2.1 Functional Requirements Review

The CAS solution developed/customized by SISI shall be reviewed and verified by Delhi Police/ External agency appointed by Delhi Police the Functional Requirements/ To-be Solution blueprint signed-off between the Delhi Police and SI. Any gaps shall be addressed by SI immediately. One of the key inputs for this testing shall be the traceability matrix to be developed by the SI for the implementation of the CAS. Apart from Traceability Matrix, the Delhi Police or external agency appointed by Delhi Police may develop its own testing plans for validation of the compliance of the system against the defined requirements.

For conducting the User Acceptance Testing, Delhi Police shall identify the employees from respective divisions, who are responsible for day-to-day operations of the functions automated through this implementation. The system, during the functional requirements review, shall necessarily satisfy the user acceptance testing process.

2.2 Integration testing

The SI will carry out the integration testing to ensure the integration of the cross function modules. The SI will submit the test plan, test cases & the test data prior to carrying out the integration test. The test plan will include the expected results. After the test, the SI will submit the Test Results which would be used to compare the actual observed results recorded during the test against the expected results. The Observations/ Shortfalls/ Errors detected will be rectified by the SI.

2.3 Security Review of the CAS Solution

The CAS implemented/customized for Delhi Police shall be audited by the PMT and the external agency appointed by Delhi Police from a security & controls perspective. Such audit shall also include the IT infrastructure and network deployed for Delhi Police. The security review shall subject the CAS solution (both Hardware & Software) for the following activities:

- Audit of Network, Server and Application security mechanisms
- Assessment of authentication mechanism provided in the application /components/ modules
- Assessment of data encryption mechanisms implemented for the solution
- Assessment of data access privileges, retention periods and archival mechanisms
- Server and Application security features incorporated etc

The recommendations of the security review will be incorporated in the system by the SI before Go-Live.

3 Acceptance of Project Documentation

Delhi Police or any other external agency appointed by Delhi Police shall review the project documents developed by SI including requirements, design, installation, training and administration manuals, version control etc. Any issues/gaps identified in any of the above areas shall be addressed to the complete satisfaction of Delhi Police.