2.4 Information System Audit of Implementation of "Crime and Criminal Tracking Network and Systems"

Executive Summary

Crime and Criminal Tracking Network and Systems (CCTNS) Project was envisaged by Ministry of Home Affairs (MHA), Government of India (GoI) to modernise police force for enhancing outcomes in the areas of crime investigation and criminals' detection, information gathering and its dissemination among various police organisations and units across the country through creation of a nationwide network under the National e-Governance Plan (NeGP). While MHA was responsible for providing necessary funds and basic Core Application Software (CAS), States were to implement the project by engaging a System Integrator (SI) and suitably customising the software to suit their requirement. MHA in February 2011, approved the project at a cost of ` 113.78 crore for various components against which GoI released ` 84.86 crore during 2009-15. A total expenditure of ` 59.31 crore has been incurred on the project as of March 2015. However, the project was yet to be Go-Live as of September 2015.

Information system audit of the project revealed the following:

Financial Management

Ö   The CCTNS Project initiated during 2009-10 with the approval of ` 113.78 crore by MHA, GoI could not be completed within timelines set, as a result Go-Live status remained un-achieved even after 19 months of the schedule date of completion (February 2014).

(Paragraphs 2.4.1, 2.4.6.1 & 2.4.6.2)

Project Planning, System Integration and Operationalisation

Ö   Project planning suffered from delays and deficiencies due to non-performance of State Project Management Consultant. Implementation of the project was considerably delayed due to non-observance of contractual obligations by project implementing agency viz., System Integrator but no action was taken against the firm.

(Paragraphs 2.4.6.2 & 2.4.6.3)

Ö   There were irregularities and deviations in procurement of hardware items and software licenses. Excess/ irregular expenditure of ` 25.10 crore was incurred on procurement of diesel generator sets (` 17.27 crore), software licenses (` 6.67 crore) and coverage of Reporting out posts (` 1.16 crore).

(Paragraph 2.4.6.4 (i) to (v))

Ö SI and Bharat Sanchar Nigam Limited (BSNL) failed to provide network connectivity to all the locations as only 85 *per cent* locations were covered as of March 2015. Out of 2,116 locations connected, only seven *per cent* of the locations had uptime connectivity of over 80 *per cent*, indicating inadequate network performance.

(Paragraph 2.4.6.5)

Ö SI also failed to complete data digitisation and migration of legacy data to CAS. Despite digitisation of 78 *per cent* of the legacy records, no records could be migrated to CAS due to poor quality of digitisation by SI and non/improper verification by police stations/authorities.

(Paragraph 2.4.6.6)

Ö Adequate capacity building was not ensured as there was shortfall of 28 *per cent* in training of police personnel. The shortfall in training was 36 *per cent* in the test checked districts. Adequate number of police personnel were not deployed for undergoing training in CAS application.

(Paragraph 2.4.6.7)

Ö The customisation and operationalisation of CAS had not yet fully stabilised. Except for registration of FIRs, no other functionalities of CAS such as investigation, prosecution, search and reporting etc., were being used by police stations and higher offices. Citizen interface services through Police portal and via SMS were yet to be made fully functional. Extension modules for other services were also not used as envisaged.

(Paragraphs 2.4.6.8 (i)&(ii))

Deficiencies in CAS database

Ö Despite facility in CAS for auto generation of date, time and serial number of FIR registration, Department decided to manually record this information in CAS defeating the very objective of CCTNS to make police citizen friendly, transparent and accountable. The CAS database was lacking in consistency, quality and effectiveness of access controls.

(Paragraph 2.4.7)

Monitoring and Evaluation

Ö Uttar Pradesh Police Technical Services has not engaged any third party agency for audit and certification of CAS security and controls. Monitoring of the project was ineffective as prescribed meetings of the Governance Structure were not held regularly.

(Paragraphs 2.4.8.4 & 2.4.8.5)

2.4.1   Introduction

The Crime and Criminal Tracking Network Systems (CCTNS) was conceptualised (June 2009) by the Ministry of Home Affairs (MHA) as a Mission Mode Project fully funded by Government of India (GoI) under the

National e-Governance Plan (NeGP). CCTNS aims at creating a comprehensive and integrated system for enhancing the efficiency and effectiveness of policing at all levels especially at the Police Station level through creation of a nationwide networked infrastructure for evolution of state-of-art tracking system. The detailed objectives of CCTNS are given in *Appendix 2.4.1.* The National Crime Records Bureau (NCRB) was appointed by MHA as the central nodal agency for managing nationwide implementation of the project.

CCTNS Core Application Software (CAS) functionalities included four basic modules for Registration, Investigation, Prosecution, and Search and Reporting and a portal for providing Citizen interface. CAS[1] developed was deployed at National Data Centre (NDC) by NCRB. The CAS having common functionalities among all the States was distributed to the states by GoI for configuration, customization and deployment at State Data Centre (SDC).

A Memorandum of Understanding (MoU) was signed (October 2009) between MHA, GoI and Government of Uttar Pradesh (GoUP) for implementation of the project in the State. The project was to be implemented in 2,487 locations including 1,504 police stations, 105 Reporting Out Posts (ROPs[2]), 792 higher offices and 86 District Training Centers/ Regional Institutes in the State.

The existing police application software viz. Common Integrated Police Application[3] (CIPA) deployed at the police stations under three phases[4] of its implementation during 2006-2011 was to be replaced by CCTNS. Hardware provided under CIPA phase-II and phase-III was to be reutilised by providing additional hardware whereas CIPA phase-I hardware was to be completely replaced. The CCTNS project was to be completed (Go-Live) within 23 months of agreement (March 2012) with SI. MHA approved ` 113.78 crore in February 2011 for the implementation of the project in the State.

2.4.2 Organisational structure

The Principal Secretary, Home (Police) Department of the State was responsible for implementation of the CCTNS. GoUP constituted (December 2009) following Governance Structure for overall project monitoring and management as detailed in chart-1 below:
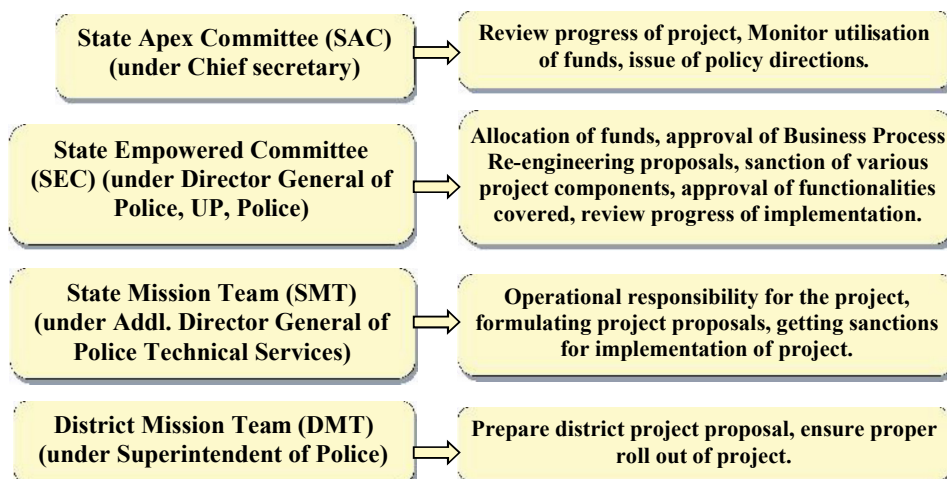
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[1] CAS (Center) developed by M/s Wipro Ltd.
[2] ROPs are police chowkis under police stations where FIRs can be registered.
[3] CIPA was an application designed for computerization of police stations under police modernization programme.
[4] CIPA Phase I (137 locations), Phase-II (440 locations) and Phase-III (401 locations).

Chart 1: Governance committees and their role and functions

State Apex Committee (SAC) (under Chief secretary) →	Review progress of project, Monitor utilisation of funds, issue of policy directions.
State Empowered Committee (SEC) (under Director General of Police, UP, Police) →	Allocation of funds, approval of Business Process Re-engineering proposals, sanction of various project components, approval of functionalities covered, review progress of implementation.
State Mission Team (SMT) (under Addl. Director General of Police Technical Services) →	Operational responsibility for the project, formulating project proposals, getting sanctions for implementation of project.
District Mission Team (DMT) (under Superintendent of Police) →	Prepare district project proposal, ensure proper roll out of project.

The Uttar Pradesh Police Technical Services (UPPTS), Lucknow was designated as the nodal agency and Additional Director General of Police Technical Services (ADGTS) as the State Nodal Officer for implementation of CCTNS.

2.4.3 Audit objectives

The audit objectives of the Information System (IS) audit of CCTNS were to assess and evaluate whether:

Ö State Project Management Consultant and System Integrator employed by GoUP for project planning and implementation performed their roles and responsibilities effectively as per contractual obligations;

Ö The core application software (CAS) was customized properly and comprehensively and system integration achieved in an efficient, effective and timely manner covering all the identified services;

Ö Digitisation and migration of legacy data from manual records into CAS was done effectively and accurately to facilitate crime investigation and criminals detection;

Ö Effective connectivity to all the police stations and higher offices was ensured;

Ö Capacity building of police personnel was adequate to equip them with necessary skills to optimally utilize CCTNS for rendering police services efficiently and effectively to the citizens;

Ö System had adequate inbuilt validation and access controls to ensure correctness, security and reliability of database; and

Ö The project implementation was effectively monitored by the Governance structure to ensure achievement of envisaged objectives of CCTNS.

2.4.4   Audit Criteria

The sources of audit criteria were:

Ö   Guidelines issued by MHA, GoI and NCRB for implementation of CCTNS;

Ö   Orders and Circulars issued by the GoI and GoUP, State IT Policy Vision (2012);

Ö   Agreements between GoUP and the vendors for implementation of CCTNS; and

Ö   Provisions of Financial Hand Books.

2.4.5   Audit scope and methodology

An Information System audit on CCTNS to evaluate the performance and effectiveness of the system was conducted from April to June 2015. An Entry conference with Principal Secretary (Home) was held on 09 April 2015 and records were examined at the offices of Additional Director General (ADG), Uttar Pradesh Police Technical Services (UPPTS), State Crime Record Bureau; Forensic Science Laboratory at Lucknow; and nine[5] districts selected through simple random sampling without replacement sampling methodology. CAS database was obtained[6] and examined using Computer Aided Audit Techniques (CAATs). Exit conference with Principal Secretary (Home) was held on 14 October 2015 and replies furnished have been suitably incorporated in the report.

Audit findings

Nine important services (***Appendix 2.4.2***) relating to police functioning were to be covered in CCTNS as per Implementation guidelines issued to States by MHA, GoI under e-Governance programme. These services were to be implemented through various modules and extension modules of CAS in the State. Implementation of CCTNS in the State of Uttar Pradesh has been badly delayed. Against the original target date of February 2014 for completion (Go-Live) of the project covering all the functionalities/ services, only one service module of CAS viz., Registration of FIRs has been made operational and being used by police stations. Other services modules such as Investigation, Prosecution, Search & Reporting etc., though developed, are rarely being used by the police stations and higher offices as of September 2015. The Portal for providing Citizen Interface has also not been fully developed and made operational.

The delays and deficiencies noticed in project planning, system integration, implementation and monitoring are discussed below:
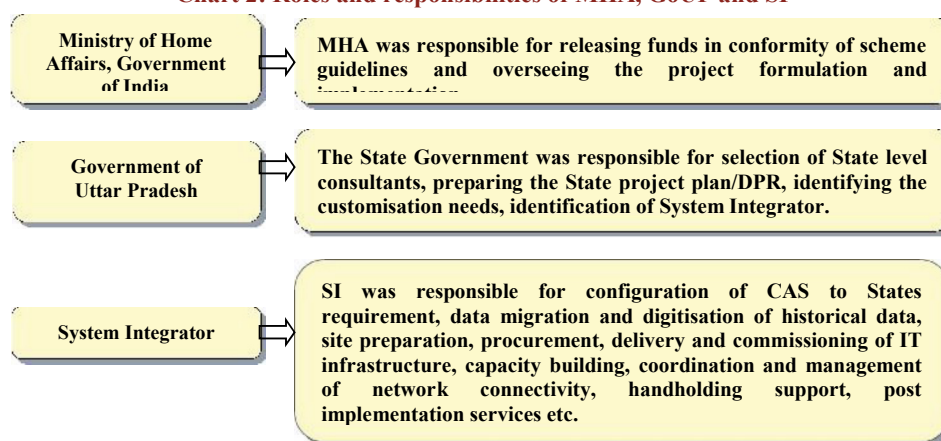
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[5] Allahabad, Badaun, Faizabad, Kanpur city, Lucknow, Mirzapur, Moradabad, Muzaffarnagar and Varanasi.
[6] CAS database backup (14/05/2015) from SDC, Lucknow.

2.4.6 Project Planning, System Integration and Operationalisation

As per the project implementation strategy of CCTNS, agreed between MHA and GoUP, States were to be provided a Core Application Software (CAS) by MHA which could be customised, configured and deployed in the State by the State Government through the State level System Integrator to meet the specific requirement of the State. Roles and responsibility of MHA, GoUP and System Integrator (SI) were as given in the Chart below :

Chart 2: Roles and responsibilities of MHA, GoUP and SI

Ministry of Home Affairs, Government of India	MHA was responsible for releasing funds in conformity of scheme guidelines and overseeing the project formulation and implementation.
Government of Uttar Pradesh	The State Government was responsible for selection of State level consultants, preparing the State project plan/DPR, identifying the customisation needs, identification of System Integrator.
System Integrator	SI was responsible for configuration of CAS to States requirement, data migration and digitisation of historical data, site preparation, procurement, delivery and commissioning of IT infrastructure, capacity building, coordination and management of network connectivity, handholding support, post implementation services etc.

2.4.6.1 Financial Management

For implementation of CCTNS in the State, GoUP prepared a Project Implementation and Monitoring (PIM) report with the help of a State Project management consultant and submitted to MHA for according approval and sanctioning project funding. MHA in February 2011, approved the PIM and sanctioned ` 113.78 crore for various components of the project as under:

Sl. No.	Activity/Project Component	Amount proposed by GoUP in PIM (` in crore)	Amount allocated by MHA, GoI (` in crore)
1.	Site preparation police station	4.13	4.30
2.	Site preparation higher offices	3.43	3.26
3.	Hardware police station	69.28	29.29
4.	Hardware higher offices	23.87	14.61
5.	Capacity building	22.07	22.00
6.	Data digitisation	24.97	9.93
7.	Handholding	20.16	13.79
8.	Data center	6.97	4.85
9.	Project management consultancy	5.37	2.75
10.	Application (CAS) related cost	1.61	1.50
11.	Integration with Jails, FSL and FPB	0	0.96
12.	CIPA complete hardware for Phase-I and additional hardware for Phase-3	0	6.54
13.	Networking	37.55	0
	Total	**219.41**	**113.78**

Further, it was also observed that against the sanctioned amount, GoI released ` 84.86 crore during 2009-15. A total expenditure of ` 59.31 crore has been incurred on the project as of March 2015 as per details given in *Appendix 2.4.3.*

Deficiencies noticed in the management of the project by GoUP and its design, development and execution by SI are discussed in the succeeding paragraphs.

2.4.6.2 Project Management Consultancy

State Project Management Consultant (SPMC) namely M/s National Institute of Smart Governance (NISG) was selected by MHA and appointed (April 2010) by GoUP for assisting State Government in preparation of Project Implementation and Monitoring (PIM) report, detailing project estimates, Request for Proposal (RFP) for selection of System Integrator (SI) for the project etc. We observed the following:

(i) Delay in appointment of SPMC

State Project Management Consultant was to be appointed by GoUP within 45 days of signing of the MoU (October 2009) with MHA. However, appointment (April 2010) of SPMC was done with a delay of four months. This delayed preparation of Project Implementation and Monitoring Report (PIM) and obtaining approval of MHA.

(ii) Delay in execution/non-execution of activities by SPMC

(a) Delay in preparation of DPR and RFP

SPMC was required to complete following activities within 12 months by deploying qualified key resources:

Ö   Project Plan, Infrastructure assessment and Capacity plan;

Ö   Functional requirement, BPR reports, data migration assessment;

Ö   Preparation of PIM/DPR;

Ö   Preparation and issue of RFP and Bid evaluation for selection of SI; and

Ö   ToRs for State Programme Management Unit (SPMU) and handover.

PIM report and RFP for selection of SI was to be prepared by SPMC within 75 days and 105 days from the date of appointment respectively.

SPMC submitted PIM (January 2011) with a delay of more than six months and RFP (April 2011) with a delay of more than eight months which delayed the process for selection of SI by 12 months, thus adversely impacting project implementation.

(b) Non execution of work

Audit observed that preparation of Terms of Reference for State Program Management Unit (SPMU) and handover activities were not executed by the SPMC which required smooth knowledge transfer of the project assets, learning, best practices followed, challenges faced and improvements suggested to SPMU. As a result, SPMU had deficient project knowledge which was bound to affect project implementation.

(c) Qualification of Key Resource

As agreed between UPPTS and SPMC, the required qualification of Senior Manager (Project Development) was to be BE/B-Tech with three years' MBA and having experience as project manager in projects worth ` 25 crore. However, Key resource deployed was having qualification of MA economics with MBM marketing and HR. This puts a question mark on the quality of services rendered by the consultant and effective monitoring by UPPTS.

In reply, the Government stated (September 2015) that penalty was imposed on SPMC for delay and quality of work. All design flaws and lapses were rectified considering MHA advisories for it.

Fact remains that the work of SPMC was not closely monitored by the State Government to avoid such delays.

2.4.6.3   System Integrator

M/s NIIT Technologies Ltd, New Delhi was appointed (March 2012) as SI by GoUP to provide services which included site preparation, supply and commissioning of hardware/ software at locations covered including CAS customization, State Data Center and Disaster Recovery (DR) site, digitization of 10 years legacy data (2003-2012), five extension modules, capacity building and training, network connectivity in co-ordination with BSNL and operation and maintenance of infrastructure for three years. We observed that:

Delay in System integration by SI

As per contract (March 2012) with the System Integrator (SI), project milestones were set for the activities to be carried out by the SI and payments thereof were related to work outcome. As per the thirteen milestones set, all the component works related to system integration viz., configuration of CAS to States requirement, data migration and digitisation of historical data, site preparation, procurement, delivery and commissioning of IT infrastructure, capacity building, coordination and management of network connectivity, handholding support, were to be completed by February 2014. Due to non-achievement of any of the milestone activities, no payment was made to SI upto the last milestone date (February 2014) except ` 4.35 crore paid (March 2012) as Mobilisation advance at the time of signing of the contract.

As SI did not complete the work by the contracted date, the State Apex Committee (SAC), in its meeting, (February 2014) extended the completion date (Go-Live) to 30 June, 2014 with the consent of the SI, by resetting deadlines for remaining works. SAC also directed that in case the work is not completed by 30 June 2014, penalty at the rate of 2 *per cent* for each week of delay subject to maximum of ten *per cent*, would be imposed on SI. The payments of ` 43.82 crore to SI, thereafter, were released based on work executed and not based on milestones fixed.

Audit observed that SI did not fill up the post of Project manager for a period of one year from October 2013 to October 2014. This showed lack of monitoring on the part of the Department. This was bound to impact adversely on the delivery of services by SI. Further, payment of ` 43.82 crore to SI before achievement of milestones was also in contravention of contractual provisions and guidelines issued by MHA. Grant of extension to SI without imposing liquidated damages (LD) was also in violation of contract provisions and amounts to extension of undue benefit to the contractor.

Audit further observed that even after the expiry of the extended period, the SI has yet not completed the works and the major works remaining incomplete as of September 2015 are configuration, customisation and extension of CAS, capacity building, network connectivity, handholding and data digitisation work. No action has been taken against SI by imposing LD/penalty for not adhering to the extended time line.

Go-Live status of the project remained unachieved

Thus, due to the failure of the SI to execute project as per contracted milestones and lack of effective monitoring by the Department, the CCTNS project could not Go-Live even after 19 months of the original schedule date of completion.

In reply, the Government (September 2015) stated that due to innumerable change request from SI, payments were delayed and due to incomplete data digitisation by SI, Go-Live could not happen. Reply is not acceptable as no action was taken against SI for delays by imposing LD/penalties as per contractual provisions.

2.4.6.4 Hardware for police stations and higher offices

An amount of ` 43.90 crore was approved by MHA based on the PIM report of the State government for procurement of hardware for police station and higher offices. Following irregularities/ deviations were noticed by audit in procurement of hardware items:

(i) Deviations from RFP in procurement of hardware

RFP document for selection of SI prepared by SPMC on the basis of PIM and approved (April 2011) by State Empowered Committee (SEC). RFP contained the scope of work and quantities of hardware and other items (Computers, printers, UPS, DG set, furniture etc.) to be covered under the project. SI was selected through a competitive bidding process hence any change in the

specifications or significant variations in the scope of the work contained in the RFP was not desirable as it could have impact on determination of the lowest bidder.

Audit observed that there were significant differences in the quantities of items as specified in RFP and those contracted with SI. Quantities of items like Desktops, 500VA UPS, External hard drives and printers was increased with the corresponding increase of cost of ` 3.43 crore while the quantities of items like 2KVA UPS, site preparation, tables/chairs etc. were reduced with resultant decrease in cost by ` 3.11 crore *(Appendix 2.4.4)*. In joint inspection Audit, however, found that many of these hardware items were lying unused as discussed in paragraph 2.4.8.3 of this report. It was noticed that even the specifications of some of the items were changed, for example, against 673 UPSs of 2 KVA providing backup of 2 hours as per RFP, 3456 UPS units of 500 VA providing backup of only half an hour were contracted.

This reflected inadequate contract management on the part of SPMC and the State government as they should have appropriately revised the quantities before issue of RFP if there were any major changes in the requirements, after approval of PIM and preparation of RFP by SPMC.

In reply, the Government stated that all alterations were made as part of adjustment to impact more locations. The reply is not acceptable as MHA denied funding for locations coming into existence after March 2011 and if there were any important changes in user requirements the same should have been included in the RFP before issue.

(ii)   Excess expenditure on DG sets

Excess expenditure of ` 17.27 crore on DG sets

Under CCTNS scheme, it was envisaged to provide one Diesel Generator (DG) set per police station to maintain regular power supply. Audit observed that SI/GoUP procured DG sets of specification and cost substantially higher than those approved by MHA in PIM. Specification and rate allowed by MHA were 2 KVA DG set at the rate of ` 0.30 lakh. However, against these specification and rate, DG set of 5 KVA at the rate of ` 1.5 lakh (1,439 units) were contracted and procured without proper assessment report for higher specification. This resulted in excess expenditure of ` 17.27 crore in procurement of 1439 DG sets.

Further, during physical verification of 58 police stations, it was noticed that DG sets were rarely used due to shortage of fuel on account of non-availability of funds. In 34 police stations, even log books of the generator sets were not maintained**.** Thus, even after incurring excess expenditure, DG sets remained unutilised.

In reply, the Government stated that deviations were made keeping in view success and sustainability of the CCTNS project and approved by State Apex Committee (SAC). The reply is not acceptable as requirement assessed by NCRB was only 2 KVA DG set, and cost of 5 KVA DG set in PIM was also not approved by MHA. No justification was recorded by SAC for permitting

higher specifications involving substantially higher cost. Further, neither the deviations were approved from MHA nor the approval for expenditure incurred from State funds for such procurement was obtained as directed.

(iii)   Software licenses procured

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Irregular expenditure of ` 6.67 crore on procurement of software licenses
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PIM approved by MHA did not provide for any procurement of software items such as Operating System windows, antivirus and Office suite etc., from CCTNS funding. Audit, however, observed that as per contract with SI, licences were procured for Operating System windows-7 Professional (5,711 copies; ` 3.63 crore), MS-Office suite (5354 copies; ` 2.81 crore) and Antivirus software (4,833 copies; ` 0.23 crore) resulting in irregular expenditure of ` 6.67 crore. Further, it was observed that due to non-functional CIPA computers, above software items worth ` 1.93 crore remained un-installed although the same were delivered (upto May 2014) by SI (*Appendix 2.4.5*). This led to wasteful expenditure of ` 1.93 crore.

In reply, the Government stated (September 2015) that un-installed software licenses were lying with UPPTS. The reply of the State Government confirmed that these software items were procured without requirement in violation of MHA approval.

(iv)   Electronic pens not put to use

Electronic pens were to be used by the investigating officers during investigation to capture data at the scene of crime. However, electronic pens were not put to use in any of the police stations in the State. This not only led to idle expenditure of ` 1.42 crore on 1,637 electronic pens delivered by SI (upto September 2014) but also defeated the purpose for which these were procured.

While accepting the fact, UPPTS replied (November 2015) that functionality is getting developed in CAS to use electronic pen.

(v)   Coverage of Reporting Out Posts

ROPs covered at the cost of ` 1.16 crore subsequently withdrawn

Reporting Out Posts (ROP) are police chowkis under the police station where FIR can be registered. MHA denied funding for the ROPs, however, contract with SI included 105 ROPs to be covered under CCTNS. Hardware and software were delivered to the ROPs at the cost of ` 1.16 crore (*Appendix 2.4.6*). During physical verification, it was found that CAS was not being used in any of the eight ROPs. Further, each ROP was incurring an expenditure of ` 14,500 *per annum* on bandwidth charges. Thus, GoUP incurred irregular expenditure of ` 1.16 crore on ROPs from CCTNS funds without approval of MHA.

In reply, the Government acknowledged the fact and stated that ROPs are withdrawn from CCTNS project.

2.4.6.5 Network infrastructure and performance

As per agreement (April 2012), BSNL was to provide network connectivity between police stations/ higher offices and State Data Center (SDC), SDC to National Data Center and between SDC and Disaster Recovery Center[7] using technologies like Virtual Private Network over Broad Band (VPNoBB), Worldwide Interoperability for Microwave Access (WiMAX) and Very Small Aperture Terminal' (VSAT). Status of connectivity provided by BSNL given in Table 1 below:

Table 1: Status of connectivity, as of March 2015

Sl. No.	Connectivity	Connectivity Status			Connectivity Percentage (available)
		Connectivity Required	Connectivity Available	Connectivity Not available	
1.	VPNoBB	2,146	1,961	185	91
2.	VPNoWIMAX	212	143	69	67
3.	VSAT	129	12	117	09
	Total	**2,487**	**2116**	**371**	**85**

Source: UPPTS connectivity status report March 2015

Cent *per cent* network connectivity remained unachieved

From Table 1 it is evident that only 85 per cent connectivity was available. As per Service Level Agreement (SLA) with BSNL, percentage uptime availability of more than 97 *per cent* was to be ensured. Status of percentage uptime availability of systems is detailed in Table 2 below:

Table 2: Status of percentage uptime availability of systems

Percentage Availability	100 - 80 percent	79 - 60 percent	59 - 40 percent	39 - 20 percent	19 - 1 percent	Zero percent
No. of links	147	177	237	300	454	801
						2,116

Source: UPPTS Network Monitoring System report (1 January to 9 February 2015)

From table 2 it is evident that 37 *per cent* of the locations (801) had no uplink connection even for once whereas only for seven *per cent* of the locations (147) percentage uptime connectivity was over 80 *per cent* reflecting poor network performance. Although, various meetings were held between BSNL/ SI/UPPTS to resolve the issues viz. non-termination of line, absence of modems, bandwidth availability, high latency but the same still remained to be resolved.

In reply, the Government stated that matter has been escalated with the BSNL at the highest level.

Recommendation: GoUP should effectively monitor and liaise with BSNL authorities at highest level to achieve optimum network connectivity.

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[7] Located at Pune.

2.4.6.6 Data Digitisation and migration to CAS

To facilitate investigating officers in crime investigation and criminal detection it was envisaged to digitise and migrate legacy data of past ten years into CAS. As per contract with SI, 23.56 lakh IPC case files and 2.93 lakh additional registers (crime/criminal related data of registered mafia, gang information, history sheets, wanted/rewarded criminals etc.) from January 2003 onwards were to be digitised in batches and verified at the level of district authorities (police station level 100 *per cent*, Circle officer level 10 *per cent*, district nodal officer level 5 *per cent* and subsequently at the UPPTS level one *per cent* prior to migration to SDC. Penalty for errors[8] found during verification was to be imposed on the SI along with re-digitisation of records.

Scrutiny of Data Digitisation status report (January 2015) revealed that only 78 *per cent* (18.35 lakh) of records were digitised by SI of which only 30 *per cent* (5.45 lakh) records were verified by districts authorities. However, no digitised records were migrated into CAS database as records verified subsequently by UPPTS were found incorrect. UPPTS directed (July 2015) all districts and SI for rectification and re-digitisation of records, however no penalty on SI was imposed (March 2015). Thus, the objective of data digitization and migration for effective tracking of history of crime and criminals from the CCTNS still remained unfulfilled.

In reply, the Government stated that data redigitisation of records by SI and verification by department was being carried out. The reply confirms that proper digitisation and migration of data by SI and verification of records by the district authorities was not done resulting in delay in programme implementation.

Recommendation: Accurate and complete data digitisation and migration into CAS should be ensured in a time bound manner.

2.4.6.7 Capacity building

The objective of CCTNS capacity building initiatives was to equip the direct users of CCTNS with the right skills and knowledge to optimally use CCTNS. Status of training planned and covered is detailed in Table below:

Training	Trainees planned	Training imparted	Shortfall (percentage)
State (All districts)	56,941	41,106	15,835(28)
In test check districts	11,112	7,126	3,986(36)

Audit examination disclosed the following:

There was a shortfall of 28 *per cent* in achieving the training targets for capacity building for the State as a whole, whereas shortfall was 36 *per cent* in the test checked districts *(Appendix 2.4.7)*. Adequate number of trainees were not deputed for training in large number of batches and the shortfall

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[8] Error rate between 0.5 to 1 *per cent* ` 5,000/batch and ` 10,000/batch for error rate above one *per cent*.

ranged between 30 to 90 *per cent* in 65 batches of role based training (*Appendix 2.4.8*). Analysis of sign-off certificates provided (scanned copy) for the trainings conducted during 2012-13 at different training centres revealed that in 124 batches[9] the number of trainees were zero. Despite shortfall in training, no training programmes were conducted at the training centers of the test checked districts since June 2013.

SI was also responsible for evaluation of the effectiveness of all end users trainings by an independent Third Party Assessment Agency (TPA). Based on the evaluation, refresher training were to be arranged. TPA[10] carried out (September 2014) evaluation for 12,640 CAS role based trained staff and found 3,404 (27 *per cent*) participants absent and 4,456 (35 *per cent*) trainees failed. No refresher course was planned (May 2015) for the failed candidates and the evaluation for other training programmes was also not yet completed.

In reply, the Government stated that training capacity was not fully utilized because of low turn up and due to law and order issues some batches went blank. SI has been instructed to conduct refresher training. Reply is not acceptable as the Departmental authorities were responsible for deputing adequate number of police personnel for training and also ensuring that SI carry out training programmes as agreed including refresher training for failed candidates.

Recommendation: Reasons for failure of such a large number of candidates need be analysed and addressed.

2.4.6.8   Customisation and operationalisation of CAS

Audit examined the functioning of CAS application and observed the following delays/deficiencies:

(i)   Operationalisation and use of CAS for core Services

The core modules of CAS included four modules viz. Registration module for submission and generation of response on the complaints submitted, Investigation module for capturing crime and investigation details, arrest cards, property seizure etc., Prosecution module for capturing prosecution details going on for the particular registration, Citizen Interface portal for citizens to register online complaint and view status on the complaint and Search and reporting module for search on specified criteria.

CAS functionalities not being used

Study of implementation of CAS in test checked districts disclosed that out of the four core modules only Registration module was being used on day-to–day basis for registration of FIRs and the remaining three modules for Investigation, Prosecution and Search & Reporting, though developed, were being used rarely by the police authorities. Report (Integrated Information Form (IIF)) generated from CAS for the period January 2014 to May 2015 in

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[9] Resulting in infructuous expenditure of ` 11.18 lakh on 124 batches (` 9,014 *per* batch) where sign-off was provided for nil candidates.
[10] M/s Ginger Wave Pvt. Ltd.

respect of all districts also disclosed that there was very little information available in CAS database about other three core functionalities as detailed in Table 3 below :

Table 3: Status of information available in CAS on various stages from Registration of FIR to final Appeal in the State

Period	FIR registration (IIF-I)	Crime detail (IIF-2)	Arrest Memo (IIF-3)	Property seizure (IIF-4)	Final form (IIF5)	Court disposal (IIF-6)	Result of appeal (IIF-7)
1 January 2014 to 14/05/2015	1,34,694	1,822	84	4	293	0	0

Source: UPPTS-IIF report generated from CAS for the period 01/01/2014 to 14/05/2015.

Audit examination disclosed the following:

Ö   Apart from registration of FIRs, integrated forms were not being captured in CAS in respect of other core services viz. investigation, prosecution, etc., reflecting that functionalities of CAS were not being fully utilised by the police stations.

Ö   Out of 1,504 police stations, only 1,276 police stations were registering FIRs through CAS (May 2015). Thus, even registration of FIRs through CAS has not been implemented in all the police stations of the State.

Ö   Citizen Centric portal services envisaged to be made available through Police portal and via SMS were yet to be made fully functional.

Ö   Search functionality to track the criminal on particular search criteria and customised report generation was also not functional.

Ö   In the absence of customised report generation functionality, reports were being generated through backend (June 2015).

In reply, the Government stated that CAS was still in the development stage and customisation of reports through front end was under process. Instruction for filling up of Integrated Information Forms (IIF) had been issued and Citizen Centric Services were being rolled out for web and mobile targeting end of November 2015. Reply is not acceptable as CCTNS has not been made fully operational (Go-Live) even after lapse of one year of the extended date of completion (June 2014). Further, no revised timeline has been fixed by GoUP as of September 2015 by which all the functionalities of CAS would be made operational and CCTNS will Go-Live.

(ii)   Extension modules for other Services

Five extension modules were developed by SI and approved (May 2014) by the SEC viz. (i) Logistics module to keep record of all the assets under department, (ii) SMS gateway module to provide SMS based services to citizens and police department; (iii) Forensic Science module (FSL) to streamline the flow between different divisions of FSL right from receipt of

samples to dispatch of expert report, (iv) Knowledge Repository module to create and share knowledge base for police department and v) Daily Duty Management module to record daily duty allocation/ distribution of work at the police station and provide reporting functionality to the higher authorities.

Audit observed that none of the extension modules were being used as envisaged in test checked districts. In Logistics and Daily duty module neither complete data was being entered nor any reports generated. SMS gateway service was available to the user groups created within the police department for instant messaging and getting details of FIRs registered, however, there was no provision enabled for the citizens to get citizen services or for intimating the complainants and the relatives of the accused. In FSL module only cases referred were being diarised and not being assigned to the concerned branches of investigation and functionality to generate all test reports through CAS was not available (July 2015). Further, no efforts have been taken for interfacing and integration of data of Jails and Finger Print Bureau as approved in PIM as of September 2015.

In reply, the Government stated that instruction to use the modules have been issued and SI was working on the amendments proposed in the FSL module. Reply is not acceptable as the Governance Structure should have effectively been monitored to ensure that the police stations start using all the functionalities of CAS immediately for timely implementation of CCTNS.

(iii)   Non-integration of Government Railway Police (GRP)

Under CCTNS, hardware items were provided to 65 Government Railway Police (GRP) stations and higher offices. However, none of the GRP police station was using CAS application due to non-integration with CAS. During physical verification of eight GRP police stations either the hardware items were found seal packed or were being used for other purposes. Thus, in absence of integration, expenditure on procurement of hardware/software items costing ` 1.21 crore remained idle (*Appendix 2.4.9*).

In reply, the Government stated that instruction have been issued to SI for integration of CAS with GRP units.

(iv)   Non-generation of State Crime Reports

The objective of the centralized database as envisaged in CAS was to fulfill the requirement of different entities as per their requirement. The State Crime Record Bureau (SCRB) gathers all statistical data about crime from all over the State for analysis and reporting to NCRB. SCRB was covered under CCTNS and provided with required infrastructure. However, during test check it was observed that CAS was not being used by the SCRB and data gathering was being done by obtaining inputs from field offices, thus, defeating the purpose of maintaining a centralised database.

In reply, Government stated that reporting services are still evolving and few are working, once they are made functional, SCRB would use the reports.

Recommendation: Implementation of CAS across all the units covered and services should be ensured and all modules made functional for proper integration and sharing of information.

2.4.7   Deficiencies in CAS database

We observed following discrepancies in the data made available to audit from State Data Centre (SDC), Lucknow.

2.4.7.1   Inconsistency in CAS database

(i) Data consistency refers to the requirement that any data written to the database must be valid according to all defined rules. Status of particular data captured in different set of tables should be same to maintain data consistency.

However, in two different master table (master office type tables[11] and master police station table[12]) containing the same data on active police stations was found to be different reflecting that proper linkages for uniform updating was missing. UPPTS replied that the issue was being taken up with NCRB.

(ii) CAS functionality was available both in online and offline mode. To maintain consistency, master tables from SDC are synchronised with police stations (client) for proper functionality and compatibility with the client database. However, many master tables of SDC were not found synched with police stations. Specific analysis of master role table revealed that it was not synched to 865 police stations. Thus, consistency between police station and SDC master tables remained unachieved affecting online usability of CAS.

2.4.7.2   Weakness in CAS Access Controls

(i) Access control grants users access during operations, by associating users with tasks/ resources that they are allowed to perform/ access based on pre-defined policy/ roles. In CAS, all users are assigned unique user numbers with login-id and password to access the system captured in user table. Roles (tasks) assigned to users and logins made in the system are captured in roles and login tables.

Analysis of login tables revealed that out of 22,495 unique users' login made in the system, no details of unique user number was found captured in the user table for 9,719 users. We also found that blank login-id was captured in case of 33,683 logins made in the system. Further, 239 users logging in the system (66,232 times), had no specified role captured in the system reflecting that access controls were not enforced in the system.

(ii) In CAS, any user created is captured with login-id linked with police station code and the status of the user is either captured as 'active' or 'deleted'. Analysis revealed that out of 19582 'active' users, 606 users were

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[11] Containing details of all offices.
[12] Containing details of police stations only.

having duplicate login-id and police station code. Thus, uniqueness of the user in the system was not ensured.

In reply, Government stated (September 2015) that it was due to enabling the provision for creation of offline user ids. Offline ids have been stopped and utility has been developed for rectification of the data.

2.4.7.3 Registration of FIRs

Prior to submitting of FIR in CAS, General Diary (GD) entry of the case is captured. As per the System Requirement Specification functionality (CAS-NCRB), registration date and time for both GD and FIR was not to be entered in the system and was to be captured from the server date and time automatically. FIR and GD serial numbers were also to be auto generated by the system. However, UPPTS changed these functionalities from 'auto generation' to 'manual entry' under customisation of CAS. MHA and Project Consultant (SPMU) had recommended (August 2014) against manual capturing of FIR and GD serial numbers. Audit observed that manual entry of FIR date leaves scope for manipulation of the date of FIR in crime reporting which has been an area of serious public concern under manual system of filing FIR and therefore should have been full automated as per the features available in CAS supplied by MHA to ensure prompt and accurate reporting of crimes and provide improved policing services to public. This defeated the very purpose of automation of core policing functions under CCTNS to ensure that FIRs are registered promptly after receipt of complaint from public.

Using IT audit tools, we conducted analysis of 1,38,939 FIRs captured through CAS and found following discrepancies:

Activity	Result of examination
Erroneous entry of date and time for FIR and GD.	In 209 cases FIR registration data and time was earlier (1 to 1,640 days) than the GD date and time, whereas in 31,518 cases GD entry date and time was not found entered.
Incorrect capture of FIR serial numbers	In 6,308 cases, FIR having higher serial number was captured with an earlier FIR date than the date of the lower serial numbered FIR.
entry of Information receive date of complaint	Information receive date was blank in 1,27,168 records, whereas in 9,773 records it was captured as '1/1/1900'.
Delayed entry of FIRs in CAS	59,809 FIRs (online-11,689 and offline-48,154) were captured with delays (43 *per cent*) ranging from 1 to 3,652 days. Further, in 34 cases, record creation date was prior to FIR registration date (upto (-) 4,770 days).
Delayed synchronisation of FIRs from police stations to SDC.	Delay of 2 to 30 days in 52,613 records, 31 to 60 days in 12,085 records, 61 to 90 days in 5,842 records and over 91 days (upto 4,842 days) in 13,235 records. In 87 cases, record synchronisation date was earlier (upto 30 days) than the record creation date.

Above discrepancies indicates that no system checks were enforced while going in for manual entry of FIRs number and date. Incomplete and inaccurate

information in the database renders the database unreliable defeating the very purpose of implementing the CCTNS. It also made online monitoring of FIRs difficult.

Recommendation: CAS database management and access controls, validation controls needs to be strengthened to ensure data integrity, confidentiality and availability at all times.

2.4.8   Monitoring and Evaluation

2.4.8.1   Ineffective monitoring by SPMU

State Programme Management Unit (SPMU)[13] was engaged (August 2012) at a cost of ` Four crore for a period of three years for providing management services for overall implementation of CCTNS in the State. Responsibilities of SPMU included supporting the State in monitoring of the compliance of the contractual obligations and SLA of the System Integrator, monitoring the deployment, customization, integration and configuration of CAS, data digitization, monitoring the procurement, deployment and commissioning of necessary hardware, networking equipment's and connectivity. Further, SPMU was to assist in the User Acceptance Testing and Audit of the system to ensure that the all the functional and security requirements and all the standards and specifications as set out to achieve the desired outcomes are met and submit a Go-Live report.

As there were considerable delays by SI in completing various activities of the CCTNS project and ensuring that it achieves Go-Live by the stipulated date, indicated that monitoring by SPMU was not effective.

2.4.8.2   Non maintenance of IT Assets registers

As per the MoU signed between GoUP and GoI (October 2009), an audited assets register in prescribed proforma was required to be maintained. A list of assets acquired was required to be submitted at the end of each financial year by Nodal Officer to MHA. However, no such assets register had been maintained in the test checked districts and the list of assets acquired had not been submitted to MHA by UPPTS as of September 2015. In test-checked districts, it was noticed that IT hardware/software supplied directly to police stations had neither been accounted for nor physically verified annually. Absence of these checks and regular monitoring of the same exposed the assets to the risk of misuse/pilferage.

While accepting the audit observation the Government stated that instruction have been issued for maintaining the asset registers.

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[13] M/s Ernst & Young Pvt. Ltd, Kolkata

2.4.8.3 Joint Physical Verification for maintenance of IT assets

Audit conducted Joint Physical Verification of 58 Police Stations and 40 Higher Offices which revealed that hardware items supplied at the locations were not properly maintained. As hardware items viz. Desktop (98 and 12 sealed pack), UPS 500VA (23 and 4 sealed pack), Modems (18), UPS 2KVA (27), Multifunctional Printers (44 and 07 sealed pack), Duplex laser printer (17 and 03 sealed pack), 24-port Switch (53 and 09 sealed pack) and external hard disk not in use (19 and 06 sealed pack) were found non-functional during physical verification.

At the police station and higher offices all installed computers were to be connected through Local Area Network (LAN) cabling under site preparation, however, audit observed that in none of the locations all installed computers were connected through LAN cable. Windows operating system in 63 computers and MS-Office in 75 computers were not activated. *Anti-virus* in 166 computers was also not updated. Further, Asset register (71), Complaint register (81) and Generator logbooks (34) were not being maintained by police stations *(Appendix 2.4.10)*. This indicated lack of monitoring by SI/SPMU and the Governance Structure created for effective and timely implementation of CAS.

In reply, the Government stated that proper instruction (September 2015) has been issued.

2.4.8.4 Information security Review

Security policy documents and security review is essential to protect the system from security threats. As per contract, UPPTS was to engage a third party agency for audit and certification of security and control aspect of the system. Further, as per RFP, SI was responsible for preparation of Backup policies, Business Continuity Plan and other policy documents.

However, neither third party agency was engaged for carrying out system security review and certification nor documented policies were available with UPPTS. In absence of system security review and documented policies, information system installed was at risk.

In reply, the Government stated that Security policy has been submitted by State IT Department and SI, and certification of the system will be done once final version is released.

2.4.8.5 Monitoring by Governance Committees

As per the MoU signed between GoUP and GoI (October 2009), GoUP was to constitute Governance Structure and ensure meetings as per the MHA guidelines. However, Governance structure consisting of four committees as detailed in *paragraph 2.4.2* above was created but prescribed meetings were not held as detailed in Table 4 below:

Table 4: Status of Meetings required as per MHA guidelines and held

Sl. No.	Name of Committee	Frequency of meeting as per guidelines	Meetings required to be held from January 2010 to March 2015	Meetings actually held as of March 2015.	Percentage shortfall
1.	State Apex Committee (under Chief Secretary)	Once in a quarter	21	10	52
2.	State Empowered Committee (under Director General of Police, UP, Police)	Once in a month	63	24	62
3.	State Mission Team (under addl. Director General of Police Technical Services)	Once in a month	63	38	40
4.	District Mission Team (under Superintendent of Police)	Once in a month	63	Not compiled at UPPTS	

In the test checked nine districts regular monthly meetings were not held as per implementation guidelines of MHA.

In reply, the Government stated that Governance Committee meetings were called only when required. Reply was not acceptable as meetings of Governance Committee were not being held in accordance with the prescribed frequency.

2.4.9   Conclusion and Recommendations

Ö   CCTNS was launched to create comprehensive and integrated system for enhancing efficiency of policing through adoption of principles of e-Governance and creation of nation-wide network infrastructure for IT enabled system for investigation of crime and detection of criminals. Timely implementation of the project components and deployment of customized CAS through SI was to be ensured by GoUP. An expenditure of ` 59.31 crore was incurred on the project by GoUP for purchase of hardware, data digitization, customization and extension of CAS, capacity building etc., as of March 2015. However, CAS could not be stabilized as of September 2015. Except for registration of FIRs other functionalities/ modules of CAS were rarely used by the police stations and higher offices though made functional. Further, Citizen centric services envisaged to be made available through Police portal and *via* SMS were yet to be made fully functional.

Recommendation: Government should take steps for effective use of all functionalities of CAS and reporting to ensure transparency and operational efficiency in working of police department.

Efforts should be made to operationalize Citizen Centric services containing online complaint facility through Web/SMS, status enquiry of the trial case etc., on priority to ensure prompt hassle free service delivery to citizens.

Ö   Requirement of hardware quantities and specifications as assessed during preparation of RFP were not followed during contract execution with System Integrator (SI). Excess/ irregular expenditure of ` 25.10 crore on procurement of hardware/ software items was incurred against MHA directives, and the same were also not adequately utilized.

Ö   SI failed to ensure cent *per cent* network connectivity in coordination with the BSNL. Despite digitization of 78 *per cent* of the records, no data could be migrated to CAS database due to incorrect data digitization by SI and non-verification of the same by police authorities as a result re-digitisation of data was under process.

Recommendation: SI/GoUP should effectively monitor and liaise with BSNL authorities at higher level to achieve 100 *per cent* network connectivity.

Data digitisation and migration of data into CAS database should be ensured in a time bound manner.

Ö   The objective of capacity building was not achieved as adequate number of trainees was not deputed for training in large number of batches resulting in shortfall of 28 *per cent* at the State level. Despite this, no training programmes were being planned by SI/UPPTS.

Ö   Automation of core police functions was not achieved as automatic capturing of FIR date, time and serial numbers were changed to manual entry. Manual intervention not only defeated the very purpose of automation but also rendered the database unreliable as erroneous data was found captured in the database.

Recommendation: Manual capturing of FIR date and other information after automation of policing services should be avoided to ensure correct crime reporting and prompt investigation.

CAS database management and access/ validation controls needs to be strengthened to ensure data integrity, confidentiality and availability at all times to make online monitoring and reporting possible at all levels.

Ö   Both project consultants viz SPMC & SPMU and implementing agency (SI) have failed to fulfill their contractual responsibilities and various committees of Governance Structure have also not properly performed their responsibilities to periodically monitor the progress of project. Even after lapse of 15 months from the extended date of completion (June 2014), Go-Live status of the project remained unachieved. It has defeated the aim of computerization and bringing in greater efficiency and transparency in various processes and functions at the police station level and improvement in service delivery to citizens.

Recommendation: Government should decide the timeline to achieve Go-Live status of the project after fixing the responsibilities for delay on the agency concerned.