

Home Department

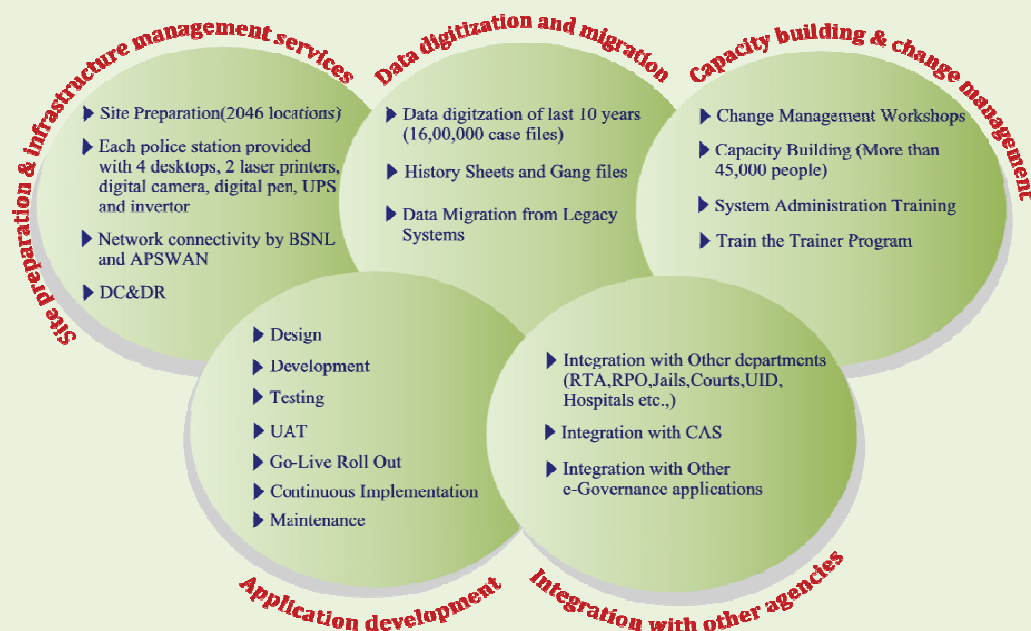
5.3 Implementation of Crime and Criminal Tracking Network and Systems (CCTNS)

5.3.1 Introduction

The Crime and Criminal Tracking Network and Systems (CCTNS) was conceptualised by the Union Ministry of Home Affairs (MHA) in June 2009 in consultation with all the stakeholders including the National Crime Records Bureau (NCRB), State Governments, Department of Information Technology (DIT) and the National Informatics Centre (NIC). It was envisioned to be implemented as a Mission Mode project based on the guidelines of the National e-Governance plan.

5.3.2 Objectives of CCTNS

CCTNS aimed at creating a comprehensive and integrated system for efficient and effective policing at all levels through a nationwide networked state of the art tracking system for investigation of crime and detection of criminals in real-time. The system also envisaged automation of policing functions at all levels viz., police station, district, Range and State levels and facilitate provision of public services like registration of complaints, checking status of registered cases, verification of persons and 82 other services online. Implementation of CCTNS involved the following activities.

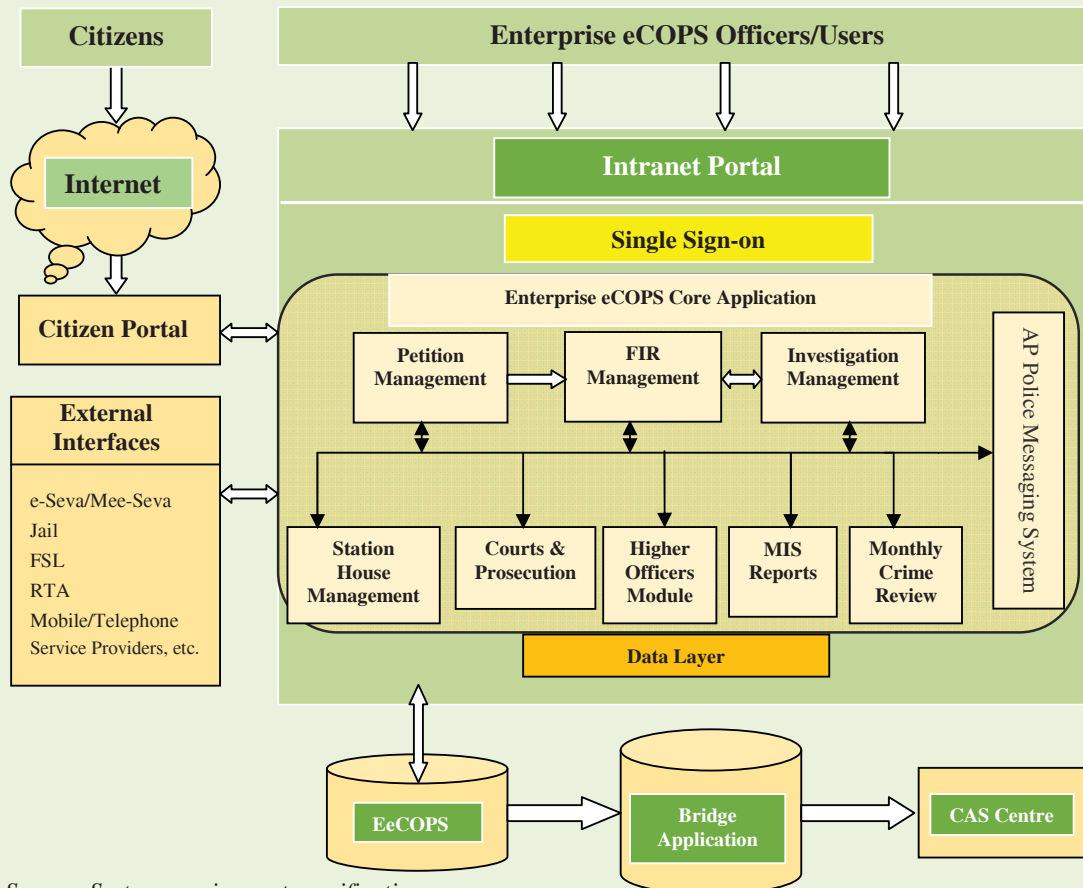


Source: Master services agreement between APeCOPS and service provider

5.3.3 System Architecture

The Core Application Software (CAS) of the system was to have eight modules and was to be common across all the States and Union Territories (UTs). It was to be developed by NCRB and provided to the States and UTs for customisation and deployment. The

latter also have an option to develop and deploy additional applications/functionalities based on their requirement. The system was to use Red Hat Linux Enterprise edition 6.1 as its OS with Ubuntu 12.04 as the client, and Oracle 11g for database. The proposed architecture of CCTNS is given below.



Source: System requirement specifications

5.3.3.1 Enterprise eCOPS

The State Government initiated computerisation of police services in 2002 through an eCOPS system, which was implemented across four Commissionerates and one district. This system was built on Java platform with Oracle 10g as the database and comprised four modules – (a) FIR Registration, (b) Investigation Process (c) Maintenance of Registers and (d) MIS Reports. This was expanded in 2006 to cover nine districts. Therefore, the State was declared by Government of India (GoI) to be an advanced State, along with four other States⁴² and was to develop additional functionalities on eCOPS, to attain the full functionality of CCTNS. The enhanced eCOPS incorporating additional modules was to be named Enterprise eCOPS (EeCOPS). The data from the existing eCOPS was to be migrated to EeCOPS and taken to the Staging Server and ported thereafter to CAS centre in NCRB for integration with the CCTNS.

⁴² Tamil Nadu, Karnataka, Gujarat and Goa

5.3.4 Audit Approach

5.3.4.1 Audit Objectives

The objectives of carrying out audit of implementation of CCTNS were to ascertain whether:

- (i) The system was implemented as envisaged;
- (ii) The system addressed the needs of the Police Department in terms of improving connectivity across all the police stations in the State;
- (iii) The system provided a centralised crime and criminal information repository to help the police officials in analysing crime patterns, investigation of crimes and detection/tracking of criminals;
- (iv) Data from the existing system (eCOPS) was migrated properly into CCTNS and all the issues in this regard were addressed adequately;
- (v) The system provided the envisaged citizen centric services;
- (vi) Capacity building was adequate to ensure efficient functioning of the system.

5.3.4.2 Scope and Methodology of Audit

Audit of implementation of CCTNS was carried out between April and September 2014 and involved examination of all the processes relating to setting up of the system including requirement specifications, system design, development, testing, migration of data from existing system (eCOPS), system commissioning and capacity building. Audit methodology involved a walk-through of the system to understand its processes, scrutiny of records at Police Headquarters in Hyderabad and sampled police stations, issue of questionnaires and discussion with the concerned police officials at various levels. An Entry Conference was held with the Inspector General of Police (PCS&S) along with the System Integrator (SI) team in February 2014 wherein audit objectives, scope, methodology and criteria were explained and agreed to. Audit methodology also involved analysis of data migrated to EeCOPS using Interactive Data Extraction and Analysis (IDEA) tool.

Sample size

The extent of implementation of EeCOPS and the functionality operationalised in the system were verified through a review of the functioning of the system in three districts (Visakhapatnam, Kurnool and Warangal) from the three regions⁴³ of the State. These districts were chosen since some of the police stations in districts have implemented EeCOPS. Within these police stations which have gone Live, Audit has chosen 12 police stations (2 rural, 2 urban in each of the three districts).

5.3.4.3 Audit Criteria

Audit findings were benchmarked against the following sources of criteria:

- (i) Andhra Pradesh Police Manual
- (ii) GoI instructions and circulars issued from time-to-time with regard to CCTNS

⁴³ Coastal Andhra, Rayalaseema and Telangana

Audit Findings

5.3.5 Implementation of the System

The CCTNS project was originally targeted for implementation in the State in all respects by September 2013. The scheduled date was extended to July 2014 by the State Empowered Committee in February 2014 as detailed below.

Table-5.1

Activity	Approved plan date	Revised plan date
Data Migration/Data Digitization services	20 th September 2013	27 th July 2014
Capacity Building and Change Management Services	20 th September 2013	31 st July 2014
EeCOPS Development, Testing and Roll out	20 th September 2013	11 th April 2014
Disaster Recovery Centre - Commissioning	20 th September 2013	30 th April 2014

However, the system was not yet implemented in all respects as of November 2014, as only seven out of the envisaged 14 modules have been implemented and there were issues with regard to integration among these seven modules also, as brought out in paragraph 5.3.5.3.

5.3.5.1 Delay in release of funds by GoI

GoI approved (18 February 2011) the Project Implementation Report submitted by the Government of Andhra Pradesh for a total amount of ₹109.84 crore for implementation of EeCoPS as part of CCTNS.

The "Andhra Pradesh Society for electronic Computerisation of Police Services (APeCOPS)" was registered (16 November 2009) under the Society Registration Act 2001 to serve as a channel for transfer of funds from GoI to the State, for meeting the expenditure towards various activities relating to the implementation of the CCTNS project. The details of funds approved, released and spent on various components of the system are as follows.

Table-5.2

(₹ in crore)

Sl. No	Name of Component	Amount approved by GoI	Funds released	Funds utilised as of 31 August 2014
1	Site Preparation – Police Stations	6.48	1.50	1.43
2	Hardware – Police Stations	45.63		
3	Site Preparation – Higher Offices	3.22	1.10	0.97
4	Hardware – Higher Offices	14.00		
5	Capacity Building	11.09	4.31	3.14
6	Data Digitization	4.55	0.00	0.00
7	Handholding Support	15.09	0.00	0.00
8	Data Centre	4.85	2.25	0.00
9	Project Management Consultancy	2.75	3.40	2.53
10	Application (CAS) related costs	1.50	0.00	0.00
11	Integration with Jails, FSL and FPB	0.68	0.00	0.00
12	Networking	0.00	4.49	4.44
13	System Integrator	-----	21.91	29.67
	Total	109.84	38.96	42.18

As can be seen from the above details, while GoI released only 35.47 *per cent* of the requirement approved, the State Government spent ₹3.22 crore in excess. This excess was obtained by way of interest on deposit of GoI funds in bank. State Government had also procured services worth ₹11.47 crore. However, the related payments were not released to the System Integrator due to paucity of funds.

Thus, non-release of approved funds by GoI resulted in slow progress of envisaged activities thereby pushing back the implementation schedule of the system. In its reply (January 2015) Government did not offer specific remarks in this regard.

5.3.5.2 Appointment of System Integrator (SI)

The State Government, in consultation with GoI, put in place (September 2009) the following project management structure for implementation of CCTNS.



Source: Government orders of September 2009

Request for Proposal (RFP) for selection of System Integrator (SI) was issued by the department only in November 2011. Tata Consultancy Services Ltd (TCS) was appointed (14 June 2012) as the System Integrator by the Government of Andhra Pradesh after following due tendering and technical evaluation process. A Master Service Agreement (MSA) was entered into between APeCOPS and TCS on 23 June 2012 for implementation of the project in phases as defined in the RFP.

Thus, although GoI conceptualised the project in June 2009, the process of implementation of the project started only during November 2011, resulting in delay in start of the project by over two years.

5.3.5.3 Lack of proper linkage between various modules

As of August 2014, out of the seven modules of CCTNS, as detailed in the System architecture in paragraph 5.3.3, only 4 modules (Petition Management, FIR Management, Investigation Management, Courts & Prosecution Management) were implemented.

However, the implementation was not complete, as the information flow from one module to the other was not working effectively and the interfaces between the modules were not functioning as envisaged. Consequently, data input into Petition Management module was not triggering the relevant action in FIR Management module. Thus, in effect, each of the modules was functioning in a stand-alone mode defeating the objectives of CCTNS.

Government replied (January 2015) that it has followed a phased approach to rollout of the system and out of 14 modules, 7 core modules have been implemented. It was stated that four other modules are ready for user acceptance testing and the remaining three are under development for completion by March 2015. As regards data triggers, it was stated that required action will be triggered only in respect of cognizable offences.

The reply of the Government is not correct as joint physical verification of the modules in use in 12 police stations by Audit team along with the departmental personnel revealed that three police stations have operationalised four modules, while the remaining nine police stations have operationalised only three modules. Further, information from 'Petition Management' module to 'FIR Management' module was not flowing correctly in any of the police stations visited by Audit team.

5.3.6 Improving Connectivity across police stations

5.3.6.1 Provision of Network Connectivity

The Police Department of the State entered into a Service Level Agreement (SLA) with Bharat Sanchar Nigam Limited (BSNL) in August 2012 for providing network connectivity to all the police stations and other police offices within the State through the State Wide Area Network (SWAN) *via* Point-to-Point Leased Line (P2PLL) from the nearest SWAN point-of-presence (PoP). Where this was not feasible, BSNL was to provide connectivity through its Virtual Private Network over Broadband (VPN_oBB), WiMax and VSAT technologies. BSNL was also to provide connectivity at State Data Centre (SDC), Disaster Recovery Centre (DRC) and National Data Centre (NDC). Further, BSNL was responsible for ensuring an uptime of between 96 – 99 *per cent* for all these types of connectivity. The SLA also provided for penalties to be levied on BSNL in case the uptime of connections was not honoured. However, audit scrutiny revealed that the Police Department has not evolved any system to monitor the uptime of the links for effective functioning of the system or to impose penalties on BSNL in case of non-adherence to the terms of agreement.

Government replied (January 2015) that since BSNL has been claiming 15 *per cent* additional charge for SLA monitoring, all the CCTNS implementing States have requested MHA/NCRB for dedicated network SLA monitoring tool for calculating network uptime and that after its approval, it will be implemented in the State.

5.3.6.2 Status of Connectivity

GoI approved the Project Implementation and Monitoring Report (PIMR) proposed by the State Government in February 2011. As per the PIMR, there were 1,662 police stations in the State and it was proposed to provide connectivity from all these police

stations to the Police Headquarters in Hyderabad. The status of key activities involved in CCTNS is detailed below.

Table-5.3

Sl No.	Activity	Due Date	Revised Date	Status as of November 2014
1	Site Survey	18-01-2013	18-01-2013	Completed
2	Site Preparation	30-08-2013	28-02-2014	Out of 2,046 sites, work on 2025 sites has been completed
3	Hardware Commissioning	30-08-2013	28-02-2014	Completed in February 2014
4	Data Migration/Data Digitization services	20-09-2013	27-07-2014	Partly completed
5	System Development, Testing and Roll out	20-09-2013	11-04-2014	Seven out of 14 modules have been developed and tested. Four other modules are ready for user acceptance testing and the remaining 3 modules are under development. The system has been rolled out in 13 out of 33 ⁴⁴ police districts. However, out of 549 police stations in these districts, the system was implemented only in 262 police stations.

Further, computer related infrastructure like tables, chairs, printer tables, etc. has not been provided in any of the police stations, including those 262 police stations where the system has been implemented.

Government accepted (January 2015) the audit observations and stated that due to lack of adequate budget, the scope of work of the project was reduced resulting in exclusion of infrastructure items like tables, chairs, printer tables, etc. It was further stated that network connectivity was pending only in respect of 61 locations due to lack of technical feasibility and also BSNL and NCRB have been requested to come up with alternate technologies other than VSAT to run the EeCOPS application.

Thus, connectivity across all the police stations is yet to be provided in the State although the revised due date for implementation of the system has expired.

5.3.6.3 Disaster Recovery Centre

The Request for Proposal (RFP) provided for setting up a Disaster Recovery (DR) Centre for storing and maintaining the databases remotely. As per the Department of Information Technology (DIT) norms, the DR site should be geographically located in a different seismic zone i.e. at least 250 km away from the main data centre site. While the DR centre was to have been commissioned by September 2013 (extended to April 2014), it was not commissioned as of November 2014.

5.3.7 Provision of centralised information repository

As per the objectives of CCTNS, a centralised repository of information was to be developed at NCRB with data to be populated from the databases of all the States and

⁴⁴ This includes 23 districts plus seven cities (Cyberabad, Vijayawada, Guntur, Rajahmundry, Warangal, Tirupati and Visakhapatnam) and three Government Railway Police stations (GRP)

UTs by November 2013. However, as brought out above, since the State is yet to implement the EeCOPS completely, it is yet to port the data available in the existing eCOPS system to the central information repository. Thus, the objective of setting up a crime and criminal information repository to help the police officials in analysing crime patterns, investigation of crimes and detection/tracking of criminals was not achieved as of November 2014.

Government replied (January 2015) that the utility for taking the data from Core Application Software (CAS) state to CAS center is under development at MHA/NCRB and that the process of mapping EeCOPS with CAS state database fields is in progress.

5.3.7.1 Inadequate logical access controls

Audit analysis of data in the EeCOPS system to the extent it has been implemented in the 262 police stations, revealed that controls relating to password use and change have not been implemented scrupulously. The Password controls in the system are inadequate and the User IDs and Passwords were available in the tables in an unencrypted format.

Government replied (January 2015) that at present, EeCOPS is not integrated with Light weight Directory Access Protocol (LDAP) and Single-Sign-On (SSO) and user management functions are temporarily handled in EeCOPS database. It was further stated that LDAP & SSO are under development and expected to be completed by March 2015 and that once the application is integrated with LDAP & SSO, all the user management functionality will be taken care of with encryption.

5.3.7.2 Non-monitoring of session controls

Audit analysis of controls revealed that logout date and time were not captured in respect of 39,714 (in 16 police districts) out of 1,10,909 records and incorrect time stamps (login time was later than logout time) were found in respect of 20,478 records.

Government replied (January 2015) that System Integrator is in the process of configuring audit logs and once the audit log is in place, all login, logout and field changes can be tracked from this facility.

In a key application like EeCOPS, non-capturing of the login and logout details of the users may result in non-identification of unauthorised access to the system and the lacuna of non-expiry of session may expose the data to tampering risks.

5.3.8 Migration of existing data

While preparing the Request for Proposal (RFP), the Police Department reckoned that there were 15,73,572 records related to the data in eCOPS which needed to be digitized to be taken to the EeCOPS and thereon to CCTNS. However, the Police Department could not provide any document to Audit with regard to the procedures laid down to migrate legacy data into EeCOPS database or the relevant plans to ensure quality assurance of the migrated data. While this activity was targeted for completion by September 2013, revised to July 2014, only 10,45,984 records (66.47 per cent) have been digitized as of 30 August 2014. The district-wise status of digitization is given in Table 5.4.

Table-5.4

Police District	Total No. of records to be digitized	No. of records digitized	Percentage of data digitized	Police District	Total No. of records to be digitized	No. of records digitized	Percentage of data digitized
Anantapuram	34385	34385	100	GRP Secunderabad	18649	18649	100
GRP Guntakal	6964	6964	100	Nalgonda	44813	44813	100
Kurnool	50913	50913	100	Nizamabad	52915	52915	100
SPS Nellore	45592	45592	100	Ranga Reddy	21658	21658	100
Srikakulam	29279	29279	100	Warangal Rural	49926	49926	100
Visakhapatnam City	44302	44302	100	Warangal Urban	26946	26946	100
Guntur Rural	50747	60495	100	Karimnagar	74929	59872	80
Prakasam	36054	32963	91	Adilabad	43242	31834	74
YSR Kadapa	50928	49023	96	Cyberabad	138758	88087	64
Vizianagaram	27202	22201	82	Mahabubnagar	62314	40855	66
Chittoor	39133	31517	81	Khammam	52219	28227	54
Krishna Rural	47365	32789	69	Medak	51370	28374	55
Guntur Urban	27922	24757	89	Hyderabad City	173649	0	0
Vijayawada City	83501	40083	48				
Visakhapatnam Rural	23744	18232	77				
West Godavari	61314	18081	30				
East Godavari	57706	12252	21				
GRP Vijayawada	11358	0	0				
Rajahmundry	17942	0	0				
Tirupati Urban	15833	0	0				
Total	762184	553828	73	Total	811388	492156	61

As can be seen above, despite extending the targeted date for completion of digitization of manual records, this item of work is yet to be completed in 33.53 *per cent* of police districts.

As regards data migration from the existing eCOPS to EeCOPS, audit scrutiny revealed that data has been migrated in respect of the 262 police stations which have implemented EeCOPS. However, while the data has been migrated correctly in respect of these police stations, Audit checks revealed that it is not amenable for retrieval and generating reports. Therefore, the objective of data migration has not been achieved even in respect of the 16 *per cent* of police stations (262 out of 1,662) where EeCOPS has been implemented.

Government attributed (January 2015) the delay in data digitization and migration activity to continuous elections from March to May 2014, delay in payment to the digitization vendors by SI, change management, capacity building, etc. and stated that, digitization activity would be completed by end of March 2015.

5.3.9 Provision of services to citizens

One of the important objectives of CCTNS was to provide citizen centric services like filing a police complaint online, checking its status online, verification of persons online, etc. as listed in *Appendix-5.3*. However, this objective has not been achieved as of November 2014 since the ‘Citizen Portal’ module of the system comprising 85 services has not yet been implemented.

Government replied (January 2015) that Citizen portal has been logically divided into static contents and dynamic data and static part was completed and ready for user acceptance testing. As dynamic data will have integration with other modules such as petition management, FIR management, meeseva and police messaging system, it will be implemented after completion of other modules.

Since the main objective of implementation of citizen portal was to give the citizens a user friendly interface to avail of various police services online from anywhere, non-implementation of this module denied citizens services like checking the status of case, applying for certain services, etc. online and they are forced to continue visiting the police stations for basic services.

5.3.10 Capacity Building

Capacity Building is a critical component of CCTNS to ensure that the direct users and other stakeholders of EeCOPS use the system optimally. The RFP envisaged four training courses as part of capacity building. The status with regard to imparting these courses to the police personnel as of August 2014 is given below.

Table-5.5

Name of the course	No. of personnel to be trained	No. of personnel trained
Awareness & Sensitisation of benefits of ICT	2228	3721
Basic computer awareness & role based training for application users	45897	RBT: 12873 UBT: 38547
Trainers training	299	29
System administration & support training	3369	Not yet started

RBT: Role based training; UBT: User based training

As seen from the above, only 10 *per cent* of the targeted personnel were imparted 'training for trainers' course even after the extended revised dates. Training for system administration is yet to start, even though the parallel run/go-live of the system started during the month of June 2014 onwards in thirteen police districts⁴⁵.

Thus, capacities were not built within the Police Department adequately to ensure efficient implementation and operation of the CCTN system. The department is relying on the System Integrator for its day-to-day operational needs of the system at police stations as it had not conducted training on 'System administration and support'.

Government replied (January 2015) that 80 *per cent* of basic computer awareness and role based training have been completed. Training for trainers and system administrator training have been planned for commencement from mid February 2015.

⁴⁵ Visakhapatnam – Rural & Urban, Kurnool, Chittoor, Vijayawada, West Godavari, Warangal – Rural & Urban, Khammam, Ranga Reddy, Cyberabad, GRP – Secunderabad and Guntakal

5.3.11 Conclusion

As brought out in the foregoing paragraphs, the main objective of CCTN system to capture the crimes and criminals related information online on real-time basis across the country and harness it for effective policing and crime investigation was not achieved as of November 2014 in the State. Implementation of the system suffered from delay in release of funds by the Government of India, preparation of site and providing network connectivity, delay in commissioning of hardware, digitization of records and migration of legacy data into EeCOPS, delays in system development, testing and roll-out. With only seven out of the fourteen modules of the system having been developed and tested, and only four out of these seven modules being functional in 262 out of 1,662 police stations, there could be further time over run in implementation of the CCTNS project.

5.3.12 Recommendations

Audit recommends for consideration that:

- (i) State Government pursue with Government of India for release of approved funds to ensure that there is no further slippage in the timelines for complete rollout of CCTNS.
- (ii) Government ensure that adequate linkages are built into the system as envisaged, to ensure that information flows seamlessly across various modules.
- (iii) Adequate training be given to the system users (at unit level), administrators and trainers to ensure effective use of the system and reduced dependence on system integrator for day-to-day operational requirements.
- (iv) Disaster Recovery Centre be setup on priority basis to operationalise the system and data in case of any contingency.
- (v) Government ensure that citizen portal is commissioned expeditiously with all the envisaged services and provide good governance at the door step of the citizens.

Higher Education Department

5.4 Infrastructure in Junior Colleges

5.4.1 Introduction

AP Educational Institutions (Establishment, Recognition, Administration and Control of Institutions of Higher Education) Rules, 1987 (APEI (ERA&CIHE) Rules) stipulate⁴⁶ that every educational agency (running either Government or private institutions) shall fulfill the conditions prescribed for extent of land, **accommodation**, corpus fund to be deposited and other issues, before permission for establishment of the institution is accorded by the Commissionerate. Further⁴⁷, the competent authority (Board of Intermediate Education) shall grant permanent recognition/affiliation to Government and private institutions⁴⁸

⁴⁶ As per the Rule 6 of APEI (ERA&CIHE) Rules

⁴⁷ As per the Rule 10 of APEI (ERA&CIHE) Rules

⁴⁸ Which are enjoying temporary recognition/affiliation at least for a period of five years