Bureau of Police Research & Development

Ministry of Home Affairs, Government of India
NH-8, Mahipalpur, New Delhi-110037

NATIONAL SECURITY STRATEGY

NATIONAL POLICE MISSION

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COMPENDIUM - 2018

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The Think Tank for Indian Police
'Promoting Good Practices and Standards'

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The Think Tank for Indian Police
'Promoting Good Practices and Standards'

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Foreword

This compendium is the synthesis of ideas for improving the state of security at national level discussed during Second Conference on National Security Strategy 2018 held in Vigyan Bhawan, New Delhi. The ideas took shape after great debate by professionals having academic domain knowledge and proven experience in the related field. There are ten papers on themes of relevance to security agencies and the Indian police.

The compendium contains ideas meant to help strategize the national security apparatus against contemporary threats in an evolved neo-crime environment and to address areas that were not adequately attended to before.

The two tiered brainstorming were done, first at Bureau of Police Research & Development to debate and develop informed ground for shaping the final recommendations by experts at Vigyan Bhawan.

I am thankful to Intelligence Bureau for letting BPR&D partner in this onerous exercise. The recommendations on each topic are worth considering and these are drawn out from research, brainstorming by experienced police officers, experts and academicians working at grass root level.

I am appreciative of the officers of NPM Division in BPR&D and the guidance of Shri V H Deshmukh, Additional Director General and Dr Nirmal Kumar Azad, Director NPM for their efforts shaping this valuable synthesis of ideas. I hope the compendium would generate relevant debate in informed circles.

A. P. Maheshwari

Date: December 2018 **(Dr A P Maheshwari)**

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Preface

The BPR&D, since its inception in 1970 has evolved as a think tank for police reform and development. The growth dynamics of police and the imperatives have been the guiding forces for BPR&D in its drive to serve the country. The projects undertaken in the past have paved way to establish good practices and standards for police all over the country.

It was a welcome development this year by MHA to associate BPR&D in conducting Second National Security Strategy Conference in May 2018. This privilege decision provided opportunity for BPR&D to utilise its talent pool to churn out suggestions for policy decisions under consideration. National Police Mission Division in BPR&D was entrusted with the onerous task and the end product of this intellectual exercise has been compiled in this compendium.

The compendium contains ten themes on matters of National Security. The themes are suggested road maps relevant to strategize the national security apparatus. The thematic work by experienced officers contains value to augment security apparatus.

I am appreciative of the efforts put in by Director NPM and his team of officers of National Police Mission who toiled hard to bring these themes in present shape.

I am also grateful to DG BPR&D to trust NPM for this onerous task.

V. Deshmukh

Date: December 2018 **(V.H. Deshmukh)**

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Preface

The National Police Mission under BPR&D is mandated for police reform by way of establishing good practices and standards for police all over the country.

The mission is alive to the needs of good governance and as such identification of future needs in policing remains our focus area.

This year MHA associated BPR&D in conducting Second National Security Strategy Conference in May 2018. It is a privilege for National Police Mission Division to have this honour.

This compendium contains ten themes on matters of National Security taken up by BPR&D at the behest of MHA. They are taken up to help strategize the national security apparatus. The thematic papers are work of experienced officers having expertise in the domain and BPR&D believes they carry value for national security concerns.

I am appreciative of the efforts put in by officers of National Police Mission who toiled hard to bring these themes in present shape. NPM identified experts in project domains and rallied extended meetings to brainstorm the agenda for debate. This was followed by meetings at two levels. To gain relevancy officers from cutting edge level from all states were invited to share their views. Later, the experts sat together to deliver the finer touches.

I am grateful to our stakeholders for entrusting faith in BPR&D for this honourable responsibility of national importance. I complement the team of officers who were engaged in successfully completing this onerous task.

Date: December 2018

(Dr Nirmal K. Azad)

Witness Protection Scheme, 2018
"The New Paradigm"

WITNESS PROTECTION SCHEME, 2018 'THE NEW PARADIGM'

Why this Scheme?

"Witnesses are eyes and ears of the Court"

In a society governed by a Rule of Law, it is imperative to ensure that investigation, prosecution and trial of criminal offences is not prejudiced because of threats or intimidation to witnesses. The need to protect witnesses has been emphasised by the Hon'ble Supreme Court of India in *"Zahira Habibulla H. Sheikh and Another v. State of Gujarat" 2004 (4) SCC 158 SC*. While defining Fair Trial, the Hon'ble Supreme Court observed that "If the witnesses get threatened or are forced to give false evidence that also would not result in fair trial".

In 1958, the 14th Report of Law Commission indicated about the need to protect witnesses. The 4th Report of the National Police Commission, 1980 also dealt with the said subject. In 154th Report (1996) The Law Commission dealt with the plight of the witnesses. The report spelt out the inconvenience and the lack of facilities and the threat from the accused to the witnesses. The 172nd and 178th report also dealt with the said subject and recommended that witnesses should be protected from the wrath of the accused in any eventuality. The Hon'ble Supreme Court also repeatedly observed about the importance to give protection to witnesses.

In complex cases, where cooperation by a witness is critical to successful prosecution of a powerful criminal group, extraordinary measures are required to ensure the witness's safety viz. Anonymity, relocation of the witness under a new identity in a new, undisclosed place of residence. At present there is no law/scheme holistically at the national level for protection of witnesses. Keeping in view the said scenario, "Witness Protection Scheme, 2018" has been drafted/devised by NALSA & BPR&D.

Framework of the proposed Scheme

The scheme consists of six Parts, and all the parts are inter-related. Part I consists of the definitions of the various terms used in the Scheme such as "Witness Protection Application, Witness Protection Fund, Witness Protection Order, Witness Protection Cell, Competent Authority". The entire proceedings regarding filing of application etc. take place before the Competent Authority who is empowered under the scheme to pass orders for protection of the witness. The Competent Authority under the scheme has been defined to mean Secretary, District Legal Services Authority (DLSA) and he/she alone can pass witness protection order for the witness protection under this Scheme and who may issue orders for protection of identity/change of identity/relocation of a witness, categorisation of threat, duration and types of protection as detailed in clause 7. For the purpose of orders passed under Part IV & V, the Competent Authority will be Chairperson, DLSAs.

The second part at the scheme spells out the categories of witnesses as per the threat perceptions. It also spells about the creation of State Witness Protection Fund. This part contains the procedural aspects such as filing and processing of application for protection. Types of protection measures are also mentioned in the said part. Parts

III to V consist of the special witness protection measures which may be required in much graver scenarios. The last part spells out miscellaneous aspects related to the operational aspects of the scheme. It also mentions about the right to review and appeal.

The Approach:-

The edifice of the scheme stands on the categorisation of the witnesses as per the threat perception. Three categories keeping in view of the degree of threat has been conceptualised i.e. Category no. A pertains to the scenario where the threat is graver and extends to life of a witness or his family members; category B comprises that degree where threat is to the safety, reputation, property of witness or family members, and lastly, the category C comprises of the degree where threats are more moderate as compared to the threats conceptualised in the categories A and B. Category C extends to harassment or intimidation of the witness or his family member's reputation.

State Witness Protection Fund has been proposed under the Scheme. The sources of the State Witness Protection Fund are: Budgetary allocation made in the Annual Budget by the State Government; Receipt of amount of fines imposed (under Section 357 of the CrPC) ordered to be deposited by the courts/tribunals in the Witness Protection Fund; Donations/contributions from International/National/Philanthropist/ Charitable Institutions/Organizations and individuals permitted by Central/State Governments and Funds contributed under Corporate Social Responsibility.

Procedural framework:-

- Filing of application: The application for seeking protection order under this scheme can be filed in the prescribed form before the Competent Authority as per area jurisdiction along with supporting documents.

- As and when an application is received by the Competent Authority, in the prescribed form, it shall forthwith pass an order for calling the Threat Analysis Report from the Commissioner of Police in Commissionerates/ SSP in District Police investigating the case.

- Depending upon the urgency in the matter owing to imminent threat, the Competent Authority can pass orders for interim protection of the witness or his family members during the pendency of the application.

- The Threat Analysis Report shall be prepared expeditiously by the Commissioner of Police in Commissionerates/ SSP in District Police investigating the case while maintaining full confidentiality and it shall reach the Competent Authority within five working days of receipt of the order.

- In the report, the Commissioner of Police in Commissionerates/ SSP in District Police investigating the case shall categorize the threat perception and shall also submit the suggestive measures for providing adequate protection to the witness or his family as contained in clause 7 of the scheme or any other measure found appropriate.

- While processing the application for witness protection, the Competent Authority shall also interact preferably in person and if not possible through electronic means with the witness and/or his family members/ employers or any other person deemed fit so as to ascertain the witness protection needs of the witness.

- All the hearings on Witness Protection Application shall be held *in-camera* by the Competent Authority while maintaining full confidentiality.

- An application shall be disposed of within five working days of receipt of Threat Analysis Report from the Police authorities.

- The Witness Protection Order passed by the Competent Authority shall be implemented by the Witness Protection Cell of the State/UT/CPO. Overall responsibility of implementation of all witness protection orders passed by the Competent Authority shall lie on the Head of the Police in the State/UT. However the Witness Protection Order passed by the Competent Authority for change of identity or/and relocation shall be implemented by the Department of Home of the concerned State/UT.

- Upon passing of a Witness Protection Order, the Witness Protection Cell shall file a monthly follow-up report before the Competent Authority.

- In case the Competent Authority finds that there is a need to revise the Witness Protection Order or an application is moved in this regard, a fresh Threat Analysis Report may be called from the Commissioner of Police in Commissionerates/ SSP in District Police.

Types of Protection Measures:

The types of Protection measures envisaged under the Scheme are to be applied in proportion to the threat. The same are not expected to go for infinite time, but are expected to be for a specific duration on need basis which is to be reviewed regularly. The measures provided for the protection of the witnesses include the following:-

(a) Ensuring that witness and accused do not come face to face during investigation or trial;

(b) Monitoring of mail and telephone calls;

(c) Arrangement with the telephone company to change the witness's telephone number or assign him or her an unlisted telephone number;

(d) Installation of security devices in the witness's home such as security doors, CCTV, alarms, fencing etc.;

(e) Concealment of identity of the witness by referring to him/her with the changed name or alphabet;

(f) Emergency contact persons for the witness;

(g) Close protection, regular patrolling around the witness's house;

(h) Temporary change of residence to a relative's house or a nearby town;

(i) Escort to and from the court and provision of Government vehicle or a State funded conveyance for the date of hearing;

(j) Holding of *in-camera* trials;

(k) Allowing a support person to remain present during recording of statement and deposition;

(l) Usage of specially designed vulnerable witness court rooms which have special arrangements like live links, one way mirrors and screens apart from separate passages for witnesses and accused, with option to

modify the image of face of the witness and to modify the audio feed of the witness' voice, so that he/she is not identifiable;

(m) Ensuring expeditious recording of deposition during trial on day to day basis without adjournments;

(n) Awarding time to time periodical financial aids/grants to the witness from Witness Protection Fund for the purpose of re-location, sustenance or starting new vocation/profession, if desired;

Apart from the above measures, any other form of protection measures considered necessary, and specifically, those requested by the witness can be ordered by Competent Authority.

Some other measures, which can be resorted to in graver scenarios are 'Protection of Identity', 'Change of Identity' and 'Relocation of Witness For protection of identity, an application for seeking identity protection can be filed in the prescribed form before the Competent Authority. The Competent Authority, keeping in view the 'Threat Analysis Report and after examining the witness, his family members or any other person can pass an order for concealment of identity of witness. Similarly, in some cases keeping in view the threat perception report a new identity may be conferred. In appropriate cases relocation of witnesses can also be ordered to a safer place within the State/UT or territory of the Indian Union.

Review and Appeal

This scheme provides review and appeal in case witness or the police authority is agreed by the decision of the Competent Authority. Review can be filed before the Competent Authority within 30 days, and an appeal can be filed before the Chairperson of DLSA in case aggrieved by the review order passed by Secretary, DLSA. The appeal against the orders passed by Competent Authority under Parts IV& V of the Scheme can be filed before Member Secretary, State Legal Services Authority.

Recovery of expenses:

In case the witness has lodged a false complaint, the State Legal Service Authority can initiate proceedings for recovery of the expenditure incurred to recoup the Witness Protection Fund.

Conclusion:-

The Witness Protection Scheme, 2018 (Draft) is a first attempt at the National level to holistically provide for the protection of the witnesses which will go a long way in eliminating secondary victimization. The witnesses being eyes and ears of justice, play an important role in bringing perpetrators of crime to justice. This scheme attempts at ensuring that witnesses receive appropriate and adequate protection. This will go a long way in strengthening the Criminal Justice System in the Country and will consequently enhance National Security Scenario.

NALSA & BPR&D

Sampat Meena, IG/Director (R&CA) BPR&D

(Witness Protection Scheme)

"Service of Warrants/Processes"

SERVICE OF WARRANTS/PROCESSES

Introduction

NCRB's publication "Crime in India-2016" reveals in its table 18A.6 (page 585) that in 2016 while 2,61,47,223 court processes (bailable warrants, non-bailable warrants, summons, other processes) where received by police, a total of 2,23,05,296 processes were served. While the All-India %age of process service was 85.3%, it was the lowest for Nagaland at 45.5% and highest for U.P. at 97.9%. However, these figures are misleading because NCRB does not collect the breakup of service of processes in the 4 categories i.e. BWs, NBWs, summons and other processes. The age analysis of pending processes would also give a fairer idea of the problem of pendency. There is also no data for the pendency of proclamations u/s 82 Cr.P.C. separately. Most importantly, it is well known that process pendency as per police records is much lower than that as per court records. Therefore the above percentages would be vastly inferior if the NCRB based this portion of the report on Court data.

A fairer idea of this pendency can be gauged from Table 18A.5 of the same publication that reveals that of the 12,74,348 criminal trials in the country in different trial courts, as many as 4,31,482 or nearly 34% were more than 3 years pending. Trials pending for more than 3 years were much more for Sessions cases (more than 50%) than for summons cases (around 27.7% for JFCMs and about 32% for JSCMs). This reveals that Sessions trials are taking much longer despite the offences being more serious in nature. The relationship between court process service and duration of trials is also self evident. For instance, U.P. shows as many as 78.6% of Sessions trials being older than 3 years.

Problem definition and suggested solutions

This problem may be divided into the following categories:

1. The problem of wrong/incomplete identification of the arrested persons. It is at the point of arrest that the person, against whom a warrant is issued subsequently, that the Criminal Justice System records his identification particulars (we will address the issue of processes for witnesses subsequently, as in their case the problem is more of the second category below). It is at this point that errors in identification lead to difficulties in process service later.

2. The problem of execution of warrants/ process despite correct identification. These problems pertain to insufficient manpower, failure to harness the power of IT and other tools and failure to re-engineer police processes.

We therefore make the following recommendations:

1. **Physical verification of address of accused -** The IO or the SHO shall ensure that they shall personally or through one of their Subordinate official visits the address disclosed by the accused so as to check its correctness before or after his arrest or while seeking his arrest warrants from the Courts.

2. **Ratification of address of accused by neighbours during verification-** The

IO/SHO shall record in the case diary the name of at least two respectable persons of the locality of accused with their contact details like addresses and telephone who ratifies that the address of the Accused mentioned in the arrest memo or the applications for seeking warrants of arrest of the accused is a correct and complete one and it does actually belong to the accused.

3. **Ascertaining permanent address or additional address of accused with verification -** The IO/SHO must ascertain the additional addresses of the accused viz. the permanent or the native place address and if addresses are located in other States, the same shall be got verified through a subordinate or by any other means through the local police of the address disclosed.

4. **Collection of documentary proof of address of accused -** The IO/SHO shall obtain documentary proof of the address disclosed by the accused and append the same with the Chargesheet.

5. **Collection of documentary proof of tenanted premises of the accused -** In case an accused is a tenant in the property, a copy of the rent deed/rent receipt or a plain paper declaration by the Landlord would be a sufficient compliance of this requirement.

6. **Appending photograph of the dwelling unit of the accused -** The IO/SHO shall take photographs of the dwelling unit of the accused which is shown/claimed to be address of the accused.

7. **Site plan of the residential address of the accused -** The IO/SHO may prepare a site plan of the residential address of the accused so that it can be used as an aid while serving the accused with any process issued by the Court or execution of NBWs or u/s 82/83 Cr.P.C. processes. In case the IO/SHO has an internet facility at Police Station, he may take the help of printouts of internet maps like Google Maps so as to show the specific location of the house.

8. **Ascertaining workplace details and address of the accused -** The IO/SHO shall ascertain the work profile/job profile of the accused and shall obtain his complete address and details of his place of work/ employer with other contact details.

9. **Documentary proof of workplace details along with photograph -**The IO/SHO may obtain a documentary proof of the place of work and record it in the charge sheet as an address where due service can be effected. Photograph of such work place and a sitemap may also be obtained.

10. **Ascertaining details of the head office of the employer of the accused -** In case the accused is found to be working in a Government/Private employment, the Head Office address of his employer shall be obtained apart from requiring such Employer to share with the Police/Court in case there is a change of place of employment or termination or removal of accused from employment.

11. **Mandating disclosure of name and address of three blood relatives of the accused -** At the time of arrest, the accused

shall share names of at least three blood relatives with their details like address and contact numbers and the nature of relation preferably with documentary proof who can be specifically contacted in case of issuance of any coercive process against him.

12. **Mandating accused to share documentary IDs -** At the time of arrest or soon thereafter it shall be mandatory for the accused to submit at least two of the following documents:-

(a) Passport

(b) Pan Card Copy

(c) Bank Passbook

(d) Credit card with photograph

(e) Ration card

(f) Electricity bill

(g) Landline telephone bill

(h) Voter I.D. Card issued by the Election Commission of India

(i) Property Tax Register

13. **Accused and surety to inform police and Court of changed address -**That in case of grant of bail, it shall be mandatory for every accused and every surety as a condition for grant of bail that, both the accused and the sureties must necessarily inform the police authorities as well as the Court granting the bail about the change of their residential address while the accused is on bail. The change of residential address should be immediately intimated either by the accused or by the sureties as the case may be or by both with due documentary proof.

14. **Area Magistrate to ensure compliance of all guidelines relating to arrest -** The concerned area Magistrate/Court hearing the application shall ensure that the above guidelines have been duly complied with by the police.

15. **Mandating disclosure and filing of documents in case anticipatory as well as regular bails before the hearing -** The concerned area Magistrate/Court hearing the Bail application shall ensure that the accused share all the above before the benefit of bail is granted to the accused.

16. **Mandating surrender of passport in Sessions Trial cases -** That in all Sessions cases it shall be made mandatory that the accused surrenders his passport, if any, with the IO/SHO.

17. **In private complaints, the following guidelines may be given:**

Supply of addresses of accused - The complainant shall share all the addresses known to him i.e. current/temporary/ permanent and workplace.

Documentary proof by complainant - The complainant shall file documentary proof of the address of the accused, if available.

Declaration from complainant - Mandating the complainant to state on oath in his affidavit that address mentioned by him in the complaint is true and complete to the best of his knowledge.

Complainant shall also disclose additional addresses-The complainant shall also disclose additional addresses of the

relatives of the accused even though service at those addresses may or may not be treated as due service upon the accused.

Additional addresses to be shared by Accused-Post entering of appearance by the accused, it shall be mandatory to him to disclose additional addresses other than those mentioned in complaint to the Court with address proof.

Accused to furnish name, address of three of his relatives-In complaint cases, accused shall furnish name, address, relation and other details of three of his relatives for future communications. However, service of summons to those addresses may not be treated as due service under Section 64 Cr.P.C.

Address of the accused and surety be got verified-Since in a private complaint no arrest memo is prepared, whether or not the Court is satisfied or bond is furnished at the time of bail, it may be mandated that the address of the accused and surety be got verified from the local police including obtaining permanent and workplace address and in case of tenanted premises, tenancy document.

18. **Photograph of the accused and surety**- Mandating Courts and Police to take on record photograph of the accused and surety along with surety bond.

19. **Surety to be sound**- Courts to ensure that the surety furnished by the accused is either in blood relation or of a person who has effective control over the accused.

20. **Verification of employment -** In case the surety claimed to be employed at some place, verification of his address be got done but verification of his employment be also got carried out.

21. **Putting in place of mechanism of E-Service of Summons** - Absence of mechanism of service by additional modes like registered post, e-mail, courier, SMS and like leaves scope for false service reports by human agency.

22. **Reducing instances of false report by Process Servers** - Furnishing of false reports by process servers/police officials, absence of mechanism where process service/police official can be mandated to pay up three visits at the address of the accused as in Civil cases, no mandate to process server/Police official to submit affidavit of proper service in criminal matters when accused is in the same district and no directive to Process Server/ Police official to photographed/video-graphed of the actual delivery of summons or affixation need to be addressed.

23. **MLAT with Foreign Countries -** That in case any criminal complaint or in a case filed by Police, before the summons shall be served on the accused in a foreign country, the court must satisfy whether India has **Mutual Legal Assistance Treaty (MLAT)** or any other similar Treaty. Upon ascertainment of these facts, summons should be served only under the formats/ guidelines provided therein.

24. **Modification of arrest memos in terms of UID/Aadhar particulars -** There is an urgent need to update the Arrest Memo Forms (IIF-III). The form does not carry

any specific particulars which can be got verified in a foolproof manner, without wastage of any time. One way of doing the same is by mentioning the duly verified Aadhaar Number and if possible by appending the Aadhaar I.D. print out of the arrestee. Such Arrest Memo may also have a declaration by the SHO of the area that the fact that the fact of his/her arrest has been uploaded/updated in the modified UIDAI data management system. For arrestee who does not have a Aadhar Card or registration, it can be got prepared or done even post his arrest, in no time.

25. **Mandatory affixation of photograph of the arrestee on the Arrest Memo -**The modified Arrest Memo should also have a mandatory column for affixation of front and side pose photograph of the arrestee. Inclusion of photograph would not only bring credibility in Arrest Memo but would also come handy in the future proclamation proceedings, if any. Also, once included in the Data Bank of National Crime Record Bureau (NCRB), the photo can be used to identify the repeat offender with the help of latest software tools which use face recognition techniques.

26. **Inclusion of all mobiles and landline connections of the arrestee in the Arrest Memo -**The Arrest Memo shall carry all mobile and landline numbers of the arrestee apart from such contact numbers of his/her parents, spouse or any other first degree relation for future reference purposes. Availability of mobile phone number of the suspect, arrested accused would come handy in establishing communication with him/her by the Investigating Agencies or the Courts. Also under 'Know Your Customer' (KYC), all telecom companies are obliged to keep updated photos and other IDs of all their customers. Once a person shares his mobile number with the investigating agency or the court during investigation or trial, apart from serving him the conventional mode of communication like summons, registered post etc. he can be served through new I.T. technology tool like Email, Facebook, Twitter, etc. In case, the mobile number of the accused is available with the police or the court not only the service of a notice/summon can be made through SMS service but even if some dasti service is to be effected, the accused can be forewarned to remain present at his house at a particular time, on scheduled date for service of processes.

27. **Inclusion of all other particulars of information technology communication tools like Email I.Ds, Facebook accounts, Linked in accounts and Twitter handles etc. of the arrestee in the arrest memo -** Another improvement which can be brought into the modified arrest memo is inclusion of particulars of other modes of communications namely Email I.Ds., Facebook accounts, Linkedin accounts, Twitter handles, etc. These modern days social media tools can be used for tracking and tracing an accused in case of any exigency akin to abscondance. Such information technology modes of communication can be legally accepted as per 'e-service' provided in Delhi Electronic Service Delivery Rules.

28. **Inclusion of all the Bank Account particulars and Credit/Debit Cards particulars of the arrestee in the arrest memo with real time web linkage to**

Aadhar Card- Another suggestion is to include all the Bank Accounts particulars and Credit/Debit Cards particulars of the arrestee in the arrest memo with real time web linkage to Aadhar Card data. This would go a long way in tracking an accused if he absconds. Any usage or operation of Bank account or the Credit Card, when put under surveillance, would get registered and send the required alarm.

29. **Creation of a dedicated website containing particulars of all the persons arrested or bailed in criminal offences -** A database may be created in CCTNS separately of all arrested criminals and also all those who are facing Criminal Prosecutions. Such a data base can even be made accessible to the public so that the same can be used to verify the criminal antecedents or credentials of a person through a simple search process by private parties. Such a data bank can also help identify repeat offenders and serial offenders and can be an effective tool in efficient handling of crime.

30. **Creation of a dedicated website for all persons against whom proclamation is issued or who are declared Proclaimed Offenders (PO)-** Likewise we can also create a database and a dedicated Website of all absconders and Proclaimed Offenders. This would go a long way in bringing in discipline in Criminal Trials. Access to this tool would help in speedy trials and help tracking the absconders. As of now there is no sure shot mechanism whereby list of absconders or P.O. of a particular state can be easily accessed by police force from other States. Having a state-wise data bank apart from a national data bank of such absconders/P.O. would help all stake holders in tracking such persons and bringing them to justice. Even otherwise, absondance is public information and as per law, an absconder/P.O. can be arrested even by non-police general citizen.

31. **To ensure the NBWs are issued only against the correct persons during the stage of investigation, the following may be ensured**:

(a) Investigating Officer may apply to a Magistrate for issuance of warrant of arrest where the offence is cognizable & non-bailable and proposed warrantee is evading his arrest.

(b) While applying for warrant, the Investigating Officer must show the Magistrate his efforts made for arresting the proposed warrantee.

(c) Investigating Officer must show that the proposed warrantee is ordinarily residing at or was very recently residing at some address which is in the knowledge of the IO through any manner and that now the proposed warrantee is not available at that address due to his deliberate intention to avoid custody in the case in question.

(d) No warrant shall be issued against a proposed warrantee merely on the ground that he is not available for the IO/ Police officials for the purpose of joining him in the investigation.

(e) Investigating Officer must satisfy the criteria that in his belief and on the basis of material collected by him/ previous IO during the investigation, he is of the opinion that the proposed warrantee is involved in the case as an accused.

(f) Only a strong suspicion or information of secret informer may not be treated as a ground for issuance of warrant of arrest.

(g) No warrant shall be issued against proposed warrantee unless the Police Officer has categorically stated in writing that there exists grounds of arrest and such grounds are not only legally admissible but are also sufficient to sustain filing of a chargesheet against him in the Court.

(h) Investigating Officer must show that in his opinion custodial interrogation of the proposed warrantee is necessary for the just and fair investigation of the offence(s) in question.

(i) The Magistrate must record his satisfaction in respect of the fact, prima facie involvement of proposed warrantee, requirement of his custodial interrogation and that he is evading his arrest.

(j) The Magistrate than can exercise his powers to issue warrant of arrest even at the stage of investigation in cognizable & non-bailable offences.

(k) Such prayers shall be endorsed by the SHOs and Asstt. P.P./Addl. P.P./ Chief P.P. of the Court as well with a declaration that they are satisfied that it is a fit case for issuance of NBW.

32. **To ensure the NBWs are issued properly during the stage of trial, the following may be ensured**:

(a) At the stage of trial, accused will normally be on bail on executing personal bond with surety. The scenario of abscondance during trial stands on a different footing, at least as compared to abscondance during investigation. In this category the accused has crossed the stage of joining of investigation and he has been summoned by a Court of Law as an accused to face trial after recording a finding of existence of sufficient material against him. And if the Trial has crossed stage of framing of Charge then a finding of existence of prima facie case also available on record. Now there exists a duly executed and sworn Bail bond coupled with a Surety bond to ensure regular appearance of the accused.

(b) Therefore, at this stage, non-appearance of accused without any justified reasons should be taken as sufficient justification for issuance of warrants of arrest including NBW as the case may be.

(c) If any authorized person is present before the Court on behalf of any

accused and moves an application to show the reasons for non-appearance of the accused, the Court must decide the application in accordance with the law particularly keeping in mind the provisions of Section-317, 205 and 87 Cr.P.C. as the case may be. If the Court is not satisfied with the reasons proposed, it may indicate the non-appearance without justification.

33. **Post conviction**: The scenario of abscondance post trial stands on a totally different footing, as compared to abscondance during investigation or trial. In this category the accused has not only crossed the stage of joining of investigation but he has also faced a full-fledged trial by a Court of Law and a finding of conviction against him stands recorded in the form of judgment of conviction. Hence as compared to the stages of "During Investigation" and "During Trial" an act of abscondance at this stage shall be treated as the most serious one. An act of abscondance at this juncture, is tantamount to clear willful abscondance and such an accused shall be dealt with strictly according to Section 174-A IPC.

34. **Mandatory registration of all property owners/landlords who let their residential/ commercial or industrial property on rent in Metropolitan areas-** All Metros attract lakhs of inbound settlers. Crimes committed by this floating population are alarmingly high. Compulsory Registration of all the Landlords and Tenants in Metro areas with specific reference to Aadhar Number may be considered.

35. **Mandating RWAs to keep track of floating population in their localities -** In order to bring orderliness in Criminal Justice System one measure that can be adopted is to involve the civil society in tracking the floating population of their locality. Residential Welfare Associations/ Market Associations are in some states even allocated funds by the Govt. under various Schemes. They have sufficient ways and means and as such can be requested to keep track of floating population in their catchment colony and update the local P.S. about it. They can be requested to keep a list of landlords who let their residential, commercial or industrial properties on rent apart from details of their tenants.

36. **For early apprehension of absconding accused/proclaimed offenders, the following suggestions may be considered:**

Making Public the name details and pictures of Proclaimed Offenders - Names, addresses and pictures if any of Proclaimed Offenders to be made public on different governmental website i.e. NCRB, CBI, Delhi Police and other State Police.

Launching of a Composite Proclaimed Offenders Website -There is an urgent need to create a dedicated website which contains data of all the Proclaimed Offenders and Proclaimed Persons/ Absconders of each State / Union Territory in a consolidated way with details of the crime, address etc. Either it can also be integrated with the CCTNS so that the efforts to trace proclaimed offenders are

not only in States where the accused declared PO but also in the entire Nation and even the world.

Providing search Option for tracking POs – Such website and another criminal investigation police websites shall carry a simply search box option where details of each Proclaimed Offenders can be ascertained and by simply searching them with their names or other available particulars. There should be no hesitation for the police in making names and details of the POs public so that Proclaimed Offenders can be arrested by the citizens u/s 43 CrPC.

Standing orders to Police – Police be mandated to display on their website all their Standing Orders and SOPs so as to spread awareness in the general public.

Digital Surveillance of Proclaimed Offenders -A Digital Surveillance System needs to put in place whereby police may be given a ''see only'' access to all Digital Data of the following departments so that they can cross check if any Proclaimed Offenders can be digitally tracked and brought to justice:

(a) All Nationalized and Private Banks Saving Account Holders data

(b) All Nationalized and Private Banks Loan Account Holders data

(c) All Nationalized and Private Banks Credit Cards Holders Data

(d) All PAN Card holders Data

(e) All MTNL / Private Landline holders Data

(f) All MTNL / Private Mobile Holders Data

(g) All Passport Holders Data

(h) All Govt. and Private Insurance Holders Data

(i) All Aadhar Card holders Data

(j) All Voter cards holders data

(k) Transport Department, Driving Licence and Vehicle Registration Data

(l) Registrar of Death Registration Data

Once given access, there is software which can as Web Crawler search out the POs out of large data bases.

Keep vigil on social media and websites- Apart from the above data base, vigil on social media and website like Facebook, WhatsApp, Linkedin and Twitter etc. also needs to be kept for searching the accused with enhanced technological tools, now persons can be tracked even through photographs.

Each Police Station to display Names and Pictures of POs prominently – All the Police Stations to display Names and Pictures of POs prominently so as to make public aware of such persons and also that public can help nabbing such POs.

Creation of the 3D map of all the Police Stations areas with licensed or open source Google maps type mapping with the help of National Informatics Centre (NIC) which will have a real time pop-up display of all the proclaimed offenders, convicts and other accused in a locality. The pop-up shall display the image, name, address and other

details in mobile/tab/pad device or laptop or desktop for usage by Police, Intelligence agencies and Judiciary only.

On the lines of PIN codes allotted by Postal Department to the entire length and breadth of our nation whereby a particular six digit PIN Code identifies a fixed area, this methodology can be further used to award a Unique Address Code (UAC) whereby with the help of Postal Department and Municipal Corporations having the house records, pre-verified six digit unique code for each address can be created. This code can be used by the police as well as by the Judiciary for cross checking of the address for verification purposes at the time of arrest/surrender and acceptance of bonds. In case a person does not have a passport to surrender, a letter can be sent to Passport Authority of India to not to issue a passport to the accused as and when applied without clearance of the concerned SHO.

37. **Re-engineering the police's court-work**: Even if the identification of the accused has been done properly, the problem will remain that the police will have shortage of staff, courts will issue multiple processes to ensure service and courts will also issue processes far more in number than they can handle to ensure that they have sufficient number of witnesses to examine on any given day.

(a) Information and communication technology is a proven resource for effecting change in the way an organization processes its functions.

(b) Large number of police force is engaged in court matters, which has to be reduced. Conviction rate has to be increased, and the disposal of the pending trial cases has to be faster. The classical system of representing the police during criminal trials is to have court constables representing the police station in the court of law. The court duty police personnel have monopoly over the court work and the system is prone to abuse. Because of territorial and functional distribution of work in different courts it is also required for each police station to have several staff on court duty. Therefore, a paradigm shift is required to improve the performance of police in the courts.

(c) The e-monitoring of court work titled as Court Monitoring System (CMS) was introduced in Vijayawada (A.P.) in 2004. Prior to the introduction of this system, there were the usual problems associated with prosecution of criminal cases in the trial courts of the Commissionerate like non-execution of process, non-attendance of witnesses and investigating officers and delay in prosecution. After the introduction of the system, there was a quantum jump in the quality of police performance in the courts which resulted in overall drastic improvement in the conviction percentage that is continued since then.

(d) The court-related work of the criminal cases in police stations has conventionally been an entirely manual process. In every police station, all the court-related work is traditionally assigned to one or more personnel (depending on the workload), designated as Court Constable(s) /

Court Head Constable(s). The work consists largely of constant liaison with court personnel and is, therefore, assigned on permanent or long-term basis to specific individuals amongst the police station staff. This leads to some kind of monopolistic control of those individual staff members over court related work. The SHO being already hard pressed for time due to other never-ending preoccupations is not able to exercise proper control over smooth proceeding of the court work relating to his police station.

(e) Instances have not been wanting in which the efficiency and efficacy of court work has suffered on account of whims and fancies of those personnel, if not sheer lethargy in say, collecting the summons / warrants from the court in good time, or ensuring attendance of witnesses or the investigating or prosecuting officer. The system has also been prone to abuse for extraneous considerations on the part of court staff of the police stations.

(f) The dissipated system of record maintenance of court proceedings also renders the monitoring and supervision of court work of their police stations by senior police officers cumbersome and difficult, even as the dwindling rate of conviction in criminal cases as well as the disposal of pending trial cases has increasingly become a matter of concern.

(g) Further, the traditional system also involves deployment of considerable quantum of manpower from police stations. Since the jurisdiction of police stations is divided on territorial basis and the jurisdiction of courts is divided on the basis of territorial as well as functional distribution of work, each police station is required to earmark dedicated staff for multiple numbers of courts.

(h) CMS was conceived as an Information and Communication Technology (ICT)-based solution to streamline the business processes of court-related work of police stations and to provide various operational and management outputs for smooth transaction of court work by police stations, on the one hand, and its effective monitoring by senior police officers, on the other. CMS is based on two basic principles.

The first is the fundamental concept in e-governance of distancing the case worker from the point of contact. The second is to substitute the police station-based management of court work by a court-oriented management of the same.

(i) Thus, with the advent of CMS, all the cases of several police stations being dealt with by a single court are pooled together and dealt with by a single court officer (of the rank of ASI or HC), assisted by a PC where necessary due to heavier workload. This has made the court of the police more transparent and resistant to abuse. Transparency has also improved because the CMS allows the case status to be known online to different stakeholders including the complainant/victim.

(j) CMS is not an IT project but process re-engineering. CCTNS, that is a database, needs to be linked with CMS like systems for effective court work which includes effective process/ warrants service, along with linkages with the Case Information System of Courts. This will also help in addressing the problem of issue of excess summons by courts as service effectiveness would increase and the disparity in Court and Police data would disappear. It would also help Superintendents and Commissioners of police to pool the processes based on the location of the wanted persons effectively.

38. **Amendment to the Identification of Prisoners' Act 1920:** The Law Commission of India in its 87th report submitted in 1980 had made detailed recommendations w.r.t. amendments in this Act. While a number of recommendations have become dated due to advent of Information Technology and advancements in forensic science, it is required to relook into the report and have a comprehensive amendment of this important legislation carried out at the earliest. BPRD may be tasked with this exercise.

39. **Video-Conferencing** between Courts and jails for under trial accused needs to be established on a massive scale for overcoming the shortage of staff and avoidance of re-issuance of processes against witnesses who could not be examined for want of production of accused in court.

40. **Amendments in Cr.P.C.: The word 'male'** may be deleted from Section 64. Use of Section 69 is limited to witnesses. Its scope may be expanded to all summons, and not be limited to only witnesses. Service by 'electronic means' may also be added along with 'post' in section 69.

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"Unidentified Dead Bodies and Missing Persons"

UNIDENTIFIED DEAD BODIES AND MISSING PERSONS

Death is not the end to the sufferings of human being, especially when the death is sudden and where the family members or friends or relatives have no idea about the whereabouts of the said individual. Thus labelled as Unidentified Body where there is no claimant.

A. Background

2. The official data for Unidentified dead bodies recovered for 2014, 2015 and 2016 on All India basis pegs the figures at 35215, 34592 and 43460 respectively. These are the people for whom their relatives and family members are still looking for, but probably in vain. The missing reports have been filed in some part of the country and the investigation might be ongoing or the final report might have been submitted, leaving the family members on their own, who have limited resources and authority to search or find them. Slowly the hope fades and records are weeded out. Probably if the figures are added up year on year, they will run into lakhs. So these are the people who are missing from one part of the country and died/killed unceremoniously somewhere else in the country, with State even reaching them at the end of their life cycle, but still unable to unite them with their loved ones during their last journey.

3. It is noteworthy that the religious places in India report unusually high incidence of unclaimed bodies.

4. The issue was taken up by Supreme Court wide Writ Petition 163 of 2013 filed by Shri Vikas Chandra Guddu Baba. In pursuance to the Supreme Court's order a committee was constituted under the directions of MHA. Though the mandate of the committee was to make recommendations on the matter of constraints faced by the State Governments in the disposal of unclaimed dead bodies, but the recommendations and constraints listed out by the committee are also very relevant to the topic of "**unidentified dead bodies and missing persons**".

5. The present data indicates that almost **80-90 percent** of the recovered unidentified dead bodies never get identified ultimately. The figure is alarming and clearly indicates that the SOP and procedures being followed are highly inefficient and inadequate. The problem needs a multi-pronged strategies, response & follow up action:

   (a) Reviewing the SOP's at Police Station and hospital level,

   (b) Technological up gradation at Police Station, Forensic labs and Primary Health Centres and Hospitals and other intermediate levels,

   (c) Creating Data base of Missing Persons and UCDBs/ UIDBs and providing access to the public

   (d) Police and investigation agencies may be empowered and authorised to have access to Data bases maintained by

the various departments' to extract relevant information, which may provide vital clues for identification purpose.

(e) Compulsory capturing vital information and basic parameters during inquest and PM, which offer help in investigation into cases relating to UCDB/UIDBs:

i) Biometric Parameters

ii) DNA fingerprinting,

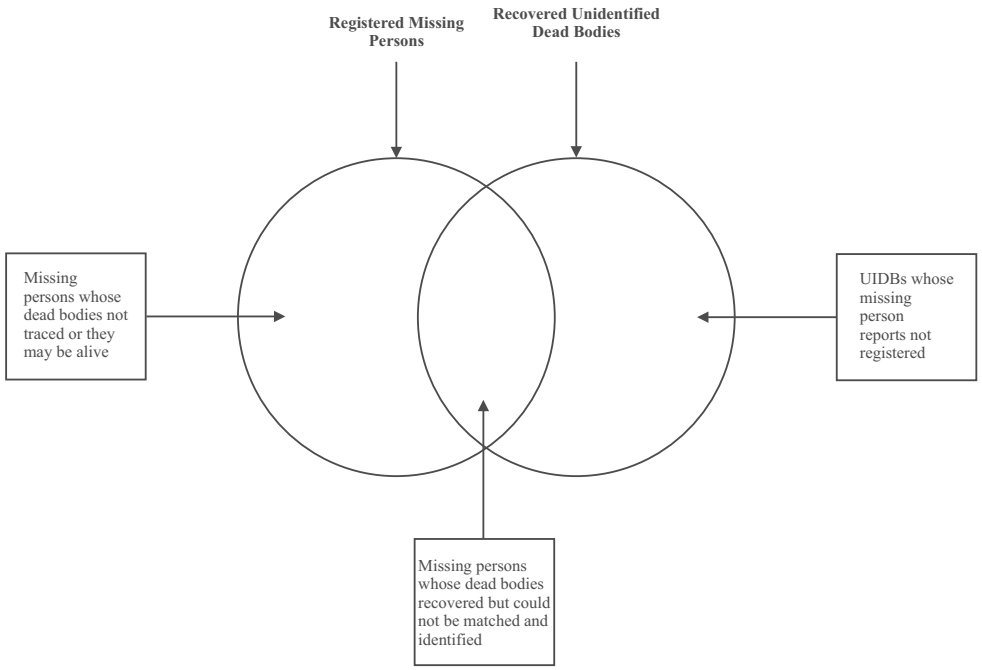
iii) Finger-prints,

iv) Photograph/Close ups of the face,

v) The other parameters from the body which may help in zeroing down identity.

B. Problem at hand

6. The problem of missing persons and recovered UCDBs/ UIDBs can be depicted in the form of Venn-Diagram given below:



7. Apart from the reported number of missing cases and UIDB there could be cases where no missing report has been filed. At the same time there could be unrecovered bodies of the missing persons. In the later case though technically an option, is not amenable to further any logical recourse except an investigation. But the former case, where the body is recovered but no case is registered is very much amenable to an SOP in this regard.

8. It is a daunting task to identify an unknown dead body in the present time. The local police just do the formality of filling up the inquest report and sending the body for the post mortem. Because of this casual approach, the identification of the unknown dead body becomes difficult. We have no professional photographer in field unit members to collect physical evidence nearby dead bodies. In today's circumstances a proper **Standard Operating Procedure (SOP)** is the need

of the hour. We may develop mobile mortuary with all modern gadgetry to capture all parameters needed for identification and investigation with facility to automatically push information in national database with minimal manual intervention. We may also strengthen field formations with Mobile Apps to facilitate collection, collation and assimilation of information in database with effective dissemination to various stakeholders in very user friendly manner using artificial intelligence and other IT tools.

9. Though separate procedures are available in various states to deal with UCDB/UIDB's and also with regard to their disposal, but there is no uniformity in the procedure and collection of basic facts and evidence, which may render help during inquiry or investigation.

10. Similarly for missing persons the Supreme Court has come up with the guidelines **after Nithari Killings** also in Writ petition 75 of 2012 read with contempt petition 186/2013 of Bachpan Bachao Andolan **that a missing report should be converted into a Kidnapping report after certain period has elapsed in case of vulnerable sections of population** (latest guidelines attached-annexure).

C. <u>Tackling the Problem: Concept</u>

11. ***It should always be kept in mind that once the process of collecting evidence is over and the unclaimed body is sent for last rites, then there is no second chance to collect or corroborate any findings later.***

(a) Giving Unique ID to recovered UCDBs/ UIDBs as soon as they are recovered on a pan India basis.

(b) Once the body gets identified and claimed general standard procedure shall come in force for further course of action.

(c) After a lapse of period on the lines of SC Judgment-**Registration of an FIR** in case of Dead Bodies as well based on evidence.

(d) Since in case of missing persons it is already mandatory to lodge FIR, but here the online registration with public interface should be ensured under CCTNS.

(e) All possible evidence which can be recovered from the dead body should be compulsorily recovered-An exhaustive list to be made and role of police and health department to be demarcated-Inquest and Post-mortem report formats to be amended accordingly.

(f) The requisite infrastructure and framework should be created and instruments/applications made to police and health for collection of Quality Data-which is amenable to online comparisons and dissemination to all stake holders. It should enable capturing of their additional inputs and feedback using IT tools.

(g) Biological samples should be collected by autopsy surgeon for DNA Fingerprinting analysis. Once the samples are received in the said laboratories, the procedure should be carried out as soon as possible and DNA analysis of these biological samples should be carried out before they get damaged. Once DNA is

extracted it can be stored for ages together and compared with the biological relatives if found or there is any claimant. DNA data should be uploaded to National Data Repository at the earliest. Thus all DNA laboratories across the country would be integrated through National Data Repository and monitoring system. It would have linkages with missing person's database (it recognizes/picks up the *alleles* matching with its biological relations) and matching would be done automatically using various parameters including DNA.

(h) User friendly system for allocation of appointment with Collection centers (Creating specialized but well distributed facilities) for family members to give DNA samples after 15 days of registration (If the person remains untraced).

(i) The various biological exhibits to be used are :

i) Blood in liquid form-but better is to make stain of this and dried properly so that it can be stored at RT for indefinite period of time without using any preservative.

ii) Long bones preferably femur or humorous or even sternum. The tissues may be removed from these and wrapped in blotting sheets before putting them in polybags.

iii) Teeth…..the best exhibits which again does not require any preservative. Should be dried and packed in blotting sheet and then stored in plastic container for years together at RT.

iv) Hair roots…after proper drying, can be packed in blotting sheet and then in plastic container. Can be stored at RT for years together.

The other biological samples which can be used are soft tissues like brain, uterus in females, kidney or heart. But these samples require preservative as Normal saline and to be stored at lower temperature at 4^0C. Many a times such facility is not available, thus above mentioned samples can be collected, stored and transported for DNA FP analysis

(j) The sample may be packed and system generated QR code may be attached which may be used for updating records including police record. Properly packaged samples may be sent (by quickest mode including air in properly packaged containers) to concerned laboratory assigned by system on the basis workload of various laboratories. Test reports should be uploaded on national repositories and all concerned may be notified automatically including the police. It would obviate delays and ensure optimal utilization of capacities of testing laboratories. However additional laboratories and augmentation of present laboratory be done on the basis of acceptable waiting period.

(k) Effective online tools (based on Face Recognition/ other available techniques) for SCRB and DCRB's to compare and search online data such as **Talash Information System** developed by NCRB. However artificial intelligence should be used for

automated matching, dissemination to all the stakeholders including parents and other kith & kin. Periodic feedback may be captured from stakeholders through system generated message and link for automated updating of database.

(l) Effective use of Social Media/ NGOs in an institutional manner.

(m) Effective use of print and electronic media not just Doordarshan or Akash vani.

D. Standard Operating Procedures to be followed at Various Levels

12. Establishing the identity of the unknown dead bodies always poses a challenge to the police and to the forensic experts. The Challenge/ Constraints faced by police**:**

(a) Lack of funds/ advance money in time.

(b) Fingerprints of all 10 fingers, good photographs are not being captured for future identification and matching.

(c) Collection of blood samples and other biological samples are not being carried out religiously for future identification and matching.

(d) Lack of equipment (safety gears) and other accessories required for transportation to Post Mortem House.

(e) State Police publishes such cases on their website but is yet to be linked with Crime & Criminal Tracking and Network System (CCTNS) of National Crime Records Bureau Delhi.

(f) There is no national Database of UCDB & UIDB, where people can see/verify their near and dear ones periodically.

(g) People are less informed about UCDB & UIDB.

(h) Lack of publicity and funds are also affecting public awareness.

(i) Lack of dedicated Police Units/ Forensic experts for UCDB & UIDB in District Police hampers the genuine/ proper collection of evidence from site of incident.

Identification can be done by matching information from the deceased (physical features, clothes, artifacts and belongings to the dead body etc.) with information from individuals who are missing or presumed dead. Direct comparison of the deceased according to the memory or available photographs, is the primary method of identification but this kind of identification should be supported by some scientific methods, IT tools (including face, body mark and denture recognition techniques), and artificial intelligence should be effectively used for this purpose. DNA FP analysis should also be explored wherever possible.

SOP at police station level to deal with unidentified dead bodies.

13. The police are the first to receive information about the dead body. On receiving the information the SHO or the officer in charge present at the police station should immediately (if not going himself then reasons to be recorded in writing and exemption taken from SP) reach the place of incident. The following steps should be taken by the officer in charge when he/she reaches the place of incident.

- Give Unique ID to the dead body as per procedure.
- Firstly the area or the site should be secured.
- No unauthorized person should be allowed to come near the place where the body has been found.
- A proper inspection of the site should be thoroughly done and photography should be done form each angle complete face, palm, and legs are visible so that easy identification of the dead body can be done.
- **Photograph of the Face is of utmost importance as far as identification is concerned, this should be taken with the help of Application compatible with Software provided in SCRB.**
- **Similarly Photograph should also be taken of Tatoo, Birth mark, any other deformity or crucial feature, which can help in identification.**
- The entire body should be thoroughly examined and written about in the inquest report.
- The nature of injuries, if any, needs to be maintained in detail.
- The clothes on the body should be well inspected to recover items like mobile, diary, note, tailor slip.
- The item recovered from the body of the deceased can be an important clue in the identification of the dead body.
- Marks on the body of the deceased like mole, birth mark, old injury, tattoo etc can be clearly mentioned in the inquest report through which the identification of the deceased can be easily done.
- Finger print can be the most helpful medium to identify the unknown dead bodies.
- The thump impression of all the ten fingers of the deceased must be taken.
- **Use Mobile App for capturing required identification and investigation related parameter of requisite quality. Quality photography and videography may also be done through App and uploaded to system for dissemination to various stakeholders.**
- In case the body is decomposed the doctor performing the postmortem should be requested to keep the skin of the finger tip. Special methods and tools may be used for proper capturing of finger prints.
- The doctor performing the postmortem should be requested to collect the DNA sample from the unidentified dead body.
- Use of refrigerated mobile/portable morgue to prevent decomposition of the body during custody and transport.
- Disposal of unclaimed bodies and its cremation shall be duly documented by way issue of death certificate/ cremation/ disposal certification by the concerned authority.
- Checklist for the officer in charge for collection of evidences from the unidentified dead body/site of incident.

Details of physical appearance/evidence that should be collected from the body

- Age
- color
- Gender
- Height
- Birth mark
- Any other injury mark
- Tattoo
- Racial features
- Any cut/burn mark
- Broken teeth
- Hair dyed/natural
- Other Items
- Clothing
- Footwear
- Watch
- Glasses
- Any jewelry item
- Hearing aids
- Key/purse/wallet/ticket
- Mobile
- Bank card
- Driving license
- Passport
- Identity card
- Finger print
- Region to which person belongs (also mention why?)

❖ *Dedicated trained forensic team at each district level needs to be deployed which can reach the scene of incident and collect the requisite details scientifically.*

❖ *During Investigation the Investigating Officer should mandatorily mention Unique ID-wise the data of SCRB through which he has tried to make identification. Unique ID may be converted into QR code for fast capturing, uploading and dissemination of information to all the stakeholders.*

Check list for doctor at the time of post-mortem:

14. Medical officers must ensure action as per the check list-

- Major injury/scars on the body.
- Time since death.
- Age from scientific methods (if sample required).
- Distinctive feature of nose, eyes, ear, teeth chin.
- Circumcision.
- Dental Structure/impressions/ procedure.
- In case of women, details about hysterectomy tummy.
- Pregnancy detail.
- Dental finding like (crown/implant/ denture).
- DNA specimen (bone/teeth/hair/blood/ tissue).
- In case of poison or if cause of death is not certain Viscera preservation.

15. Above data/ information be captured and uploaded to database using QR codes by the Doctor and the same may be made available to IO through the National Data

Base Dissemination System. National Database system may be enabled to identify failures/ lapses/ shortcomings in data capturing and the same be flagged to controlling and disciplinary authorities of concerned medical officers and should be pursued to logical end with inbuilt escalation mechanism. It will help in ensuring better compliance with accountability. Accountability of supervisory medical officers for lapses and failures should also be ensured through the same mechanism.

16. Three very important aspects for identification are estimated age of the deceased, cause of death and time since death. These figures should be given special mention in the PM report as they are very essential to filter search parameters. For age of the dead body, a mean age from police inquest report and medical analysis can be taken for searching the database as per the assigned priority.

17. Sample collection kits should be provided to the hospitals as per SOP, along with the infrastructure for storage of such samples. The disposal of unclaimed/unidentified dead body should be after 72 hrs and seven days in case of foreigners.

Sealing, Packaging, Labelling and Transportation of samples, specimens to the centre of examination/ testing:-

18. Sealing, packaging, assigning identity labels (QR code system) should be done at the respective quarters of collection by the concerned officials and should be transported (through fast and standardised system of transportation) to the respective centres for the examination and testing laboratories. Special care should be given to maintain chain of custody. The system should be robust, standardized and free from any manipulation. For this purpose: Blood and other samples are being collected by the centres across the country and being sent to testing laboratories. The similar system may be further developed using QR codes for faster processing enabling fault free uploading of data to the national repository. There is need of strict code for proving chain of custody before the court. If that is accomplished, over-burdened Police would be relieved of this task without compromising chain of custody. It will provide effective solution for problem being faced in the present system which suffers on account of callous and unscientific attitude of police. Delays, spoilage and disappearance of samples would be totally eliminated.

(a) An email ID and mobile numbers of stakeholders should compulsorily be captured and integrated with QR code of the case for conveying the results of the Laboratory.

(b) The results of the examination should be uploaded using QR code in national data repository and should be conveyed to all the stakeholders on official mail/mobiles immediately including IO (Police). Test reports and other information may also be accessed and downloaded by the stakeholders as per their authorization.

(c) Intelligent System should be developed for matching the record, capturing periodic information directly from stakeholders using user friendly link sent through mobile/ email. Inferences

of feedback received may be derived using artificial intelligence and conveyed to IO for further investigation purpose. System generated lead for doing necessary investigation may also be conveyed to IO for enabling him to do quality job.

(d) It is highly recommended that system should have **Face, Denture, identity mark, birth mark and other Recognition Capabilities.**

(e) **Charter of duties and responsibilities of DCRB, SCRB and NCRB be integrated with the system using powerful IT tools with periodic upgrading with the Talash Information System. The system may be further improved to serve higher purpose using artificial intelligence and machine learning tools effectively.**

E. New Technology enabling required to implement above Recommendations:-

- Establishing a National Data Bank/ Repository for DNA and other test results.
- All relevant data/ information be captured and uploaded to the National Data Base System.
- E-Inquest System with on spot help through mobile App, to capture all angles of dead bodies which are critical for identification, may be captured through pre-fixed templates in the App. App should have capability of assessing quality of photographs and guiding IO on real time basis to capture good quality and readable photographs. Fingerprints and iris of UIBDs/ UCBDs should also be uploaded in the system/ national data system on real time basis.
- State of the art modern mortuary with freezers, security and accountability features should be set up at sub divisional level under over all control and supervision of state forensic medicine advisor in the home department.
- We may consider having mobile mortuaries with modern facilities for conducting PM and capturing necessary identity parameters and vital evidence.
- A well equipped vehicle with portable and refrigerated morgue should be available for transportation of dead bodies from scene of occurrence to mortuary.
- Development and use of specially designed robots with the assistance of DRDO/ CSIR to perform certain tasks that will help to contain infections from the dead bodies to the handlers may also be considered.
- Disposal of the dead body after completion of autopsy related formalities by way of cremation and burial etc being primarily a municipal function should be discharged by the Municipality/ Local Self Government functionaries. Body shall however be not disposed and kept in freezer of mortuary before expiry of period fixed by State Government (preferably 72

hours). During which effort shall be made to ascertain identity and next of kin to the extent possible.

- Advance Powerful System for comparison/ matching and dissemination of relevant information to stakeholders with necessary investigative leads may be developed and artificial intelligence, machine learning and other IT tools should be effectively used to the best advantage. SMS/Email based link may be sent for capturing periodic additional information and feedback from stakeholders, which might have come to their notice.
- Photographs and other details of UIDBs/ UCDBs with matching/ similar parameters may be sent to the concerned victim's family members/ IO son their mobile numbers/ Email ID as soon as new records are uploaded in the repository.
- National Database/ Repository should also be integrated with CCTNS for better coordination.
- Collection/ Facilitation Centers network be developed for user friendly collection, packaging, sealing and transportation of samples of family members after lapse of predefined period.
- Aadhar Database access and enabling be done to establish identity of the Dead body on real-time basis.
- Election Commission data should also be used for establishing identity using Face Recognition techniques and other advance IT tools.
- National Database system may be enabled to identify failures/ lapses/ shortcomings, the same be flagged to controlling and disciplinary authorities and should be pursued to logical end with inbuilt escalation mechanism. It will help in ensuring better compliance with accountability. Accountability of supervisory officers for lapses and failures should also be ensured through the same mechanism.

19. There are many pathological labs collecting, sealing, packaging and transporting samples using fastest means and test reports are uploaded and made available to clients using various modes including on line web based system. Government can certainly develop elaborate system for collection of samples with proper sealing, packaging and transportation system and may be sent to testing laboratory based on various managerial considerations. Due care about chain of custody be maintained and tempering free arrangement needs to be developed. It will reduce the burden of police and much more transparent, accountable and efficient system should be developed with proper chain of custody. Any lapse, mistake or laxity has to be handled ruthlessly, efficiently and effectively.

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"Training for Investigation and Prosecution of New and Emerging Crimes"

TRAINING FOR INVESTIGATION AND PROSECUTION OF NEW AND EMERGING CRIMES

Introduction:

There is no universally acceptable definition of new and emerging crimes. As these crimes are still nascent and evolving, the definitions if attempted, need regular amendments. To distinguish the 'new and emerging' crimes from the 'traditional' the following discussion is essential.

(a) 'Traditional Crime' (like homicide, robbery, theft/burglary, falsification of account books etc.) has declined sharply in recent decades in developed countries including US and UK. But new types of crimes—many of them enabled by computer technology—have begun to proliferate. Criminals are using technology to invent new types of crime, and are creating new methods for committing traditional crimes.

(b) New crimes, like "ransomware," (a type of online attack that blocks victims' access to their computers until they pay a ransom), "sextortion" (sexual exploitation, in some cases by blackmailing victims with the threat of disseminating sexual images of them) and synthetic identity the (taking pieces of information from multiple people to create an entirely new, fictional identity that can often be exploited for long periods of time) have become a billion-dollar-a-year enterprise. Moreover these new crimes like Phishing, trolling, malware, online scams, revenge porn and the child sexual exploitation largely remain unregistered and undetected.

(c) Technology is changing how some long-established types of crimes are committed today. For example, drug dealers are discovering they can move larger quantities of illegal drugs more easily and with less risk via "dark web" internet marketplaces and postal mail than they can by selling drugs on the streets.[1]

(d) Nearly every type of crime today has a digital component. Investigators today are encountering a wide array of digital data captured by a variety of devices—smart phones, laptops and tablets, GPS systems, Fitbits and other wearable technologies, closed-circuit television, and the growing body of "Internet of things" devices. Likewise, future technologies, such as driverless cars, virtual reality and implant technology, will pose new risks and opportunities for the police service.

(e) Digital evidence being latent, volatile, time-sensitive and most often foreign located, poses significant challenges to the Law Enforcement Agencies (LEAs). New technologies like Encryption often restrict/ prevent police access to information as well as evidence in digital space. At times, even with the assistance of service providers and a court order, police may not be able to access encrypted data.

(f) Criminals are exploiting technology, and the tools to preserve anonymity online, more quickly than law enforcement is able to bring new techniques to bear. Just as

[1] The Changing Nature of Crime And Criminal Investigations, January 2018, Police Executive Research Forum, Washington, D.C. 20036

criminals learn to exploit new technologies and invent new *modi operandi*, LEAs need to make use(of technological innovation and develop new investigative measures to counter the threat of new and emerging crimes. To prevent, detect and combat the emerging crimes, the LEAs need to acquire critical new skills and build capacities in investigating officers and prosecutors.

(f) All these new and emerging crimes are largely transnational in jurisdiction and organized in nature. Recognizing the threats to global peace and security, United Nations General Assembly on 9 December 1998 resolved to establish a comprehensive international convention against transnational organized crime (TOC).

(g) The United Nations Convention against Transnational Organized Crime (UNTOC) was adopted by General Assembly on 15 November 2000. It entered into force on 29 September 2003. India signed and ratified UNTOC in 2011. UNODC is the nodal office wrt UNTOC implementation.

Types of New and Emerging Crimes/TOC:

(a) The Conference of the Parties to the United Nations Convention on Transnational Organized Crime (UNTOC) identified cybercrime, identity-related crimes, human trafficking and human smuggling, the trafficking of small arms and light weapons, trafficking in cultural property, environmental crime (illegal logging, illegal mining, illegal fishing, the illegal wildlife trade etc.), piracy (an old form of crime which has re-emerged), organ trafficking, and fraudulent medicine as new and emerging crimes of concern.

(b) No exhaustive list of TOC is drawn by UNODC. Australian Criminal Intelligence Commission classifies Serious and Organised Crime (British and Australian equivalent of TOC) in the following manner.

A. Illicit Commodities

i) Trafficking of Drugs and psychotropic substances

ii) Counterfeit Currency

iii) Illicit pharmaceuticals

iv) Firearm trafficking

v) Environmental crime

vi) Trafficking of Cultural Property

vii) Intellectual property crime

B. Crimes in the Mainstream Economy

i) Card fraud

ii) Export/Import Frauds

iii) Securities and financial market fraud

iv) Bank Frauds including technology enabled frauds

v) Insurance Frauds

vi) Visa and migration fraud

vii) Maritime Piracy

viii) Revenue and taxation fraud

C. Crime Against the Person

i) Human trafficking and slavery

ii) Maritime people smuggling

iii) Child sex offences

D. Enabler Activities

i) Money Laundering

ii) Cybercrime and technology-enabled crime

iii) Identity crime

iv) Criminal exploitation of business structures

v) Public sector corruption

vi) Violence

(c) New Crimes have been most prominently discussed in form of Cybercrimes, which have been divided broadly under three heads, namely:

A. Pure Cybercrimes

i) Ransomware

ii) Hacking

iii) DDOS

iv) ATM Malware

v) Attacks on SWIFT infrastructure

vi) Bitcoin Thefts

vii) Theft of Computational Resources

viii) DNM (Dark Net Market) Exit Scams

B. Cyber Enabled Crime

i) Frauds / Cheating

ii) Nigerian Lottery Scams

iii) Business Email Compromise

iv) Money Laundering

v) Social Media Harassment

C. Incidental Cybercrime

Use of some amount of cyber space (including Digital Devices) is incidental for commission of crimes / presence of evidence / presence of victims / presence of suspects – this covers practically all crimes.

Broad Taxonomy for Cyber Crimes

Roles and Special Skills required:

(a) Cybercrime poses a significant challenge to law enforcement agencies worldwide. While it is perhaps no longer a novelty, the ways in which criminals exploit technology are evolving at an increasingly rapid pace, causing serious concern to law enforcement. The latest developments in technology are being adopted by cybercrime networks to shape new, unique and innovative modus operandi with little time lag. The information infrastructure is increasingly under attack by cyber criminals. The number, cost and sophistication of these attacks are increasing sharply. Most of these attacks are transnational by design, with victims spread throughout the world, necessitating multi-jurisdictional or transnational investigations.

(b) Traditional modes of training through books, boards, Power Point / PDF-based approach are not very suitable for advanced trainings to combat cybercrime. There is need for more practical training, something based on simulated environments. However, given the need of volumes, the proposed methodology should be scalable.

(c) The challenges of cybercrime trainings can be summarised as:

i) Traditional Power Point/ PDF-based approach not very suitable

ii) Number of officers to be trained (volume)

iii) Inaccurate assessments of needs of Law Enforcement Agencies (LEAs)

(c) The expanding ubiquity, frequency, and severity of cybercrimes entail LEAs to think beyond the one-size-fits-all training strategy. In devising new counter-responses, continual advancement in knowledge and skill of cybercrimes is a core imperative.

(d) Capacity-building for LEAs must be seen in the context of boosting the capabilities in these functional areas:

i) To detect cybercrimes

ii) To receive complaints about cybercrimes

iii) To be a first responder to the complaints about cybercrimes

iv) To register criminal complaints about cybercrimes, with all details

v) To investigate cybercrime cases

vi) To do forensic as well as data analytics related to cybercrime cases

vii) To collect admissible evidence and launch prosecution in cybercrime cases

viii) To prepare and launch public awareness campaigns to prevent cybercrimes

ix) To work with researchers, academia and private sector to improve cyberspace security

x) To liaise with international LEAs and service providers

(e) In order to create a suitable training curriculum, we first need to identify what are the roles or professional categories that have duties related to cybercrime investigations and digital forensics, and identify what are the core skills they should possess. Below are the proposed series of roles and skills needed. The roles have been grouped on several tracks in order to structure the training curriculum.

i) Responders Track

ii) Forensics Track

iii) Investigations Track

iv) Intelligence Track

v) Management Track

vi) Judiciary / Prosecutors Track

These Tracks, Roles and Required skill sets are described in following paragraphs

I. Responders Track:

A. First Responder Officer can be a PCR Van officer or the Emergency Officer of the Jurisdictional Police Station. He is often the first to arrive on the scene of crime and needs to have an awareness of how technology affects crime, what is digital evidence and how it should be handled.

B. Duty Officer is the Frontline officer that receives and offers first line response to complaints involving crime using technology. He/She needs to assess complaints and respond appropriately to instances of crime using technology and make appropriate referrals where required and/or necessary.

Skills needed:

- Understanding what digital evidence is and what can be found by analysing digital evidence
- Crime scene attendance – identifying, gathering, preserving digital evidence with proper chain of custody.
- Knowledge of current legislation and policies related to crimes using technology including the legal authority to obtain telecommunications information such as subscriber data.
- Knowledge of information technology and how it is used including the internet, email, communication technology, online services including social networking.
- Knowledge of risks for the individual, organisation or investigation when using technology including the consequences of interacting with devices including an understanding of reliability of information and associated risks when relying on uncorroborated information (for example, email header, existence and pseudonyms), exposure of identity and other risks when operating online and risks associated with the volatility of electronic evidence.
- Knowledge of consequences to alteration of dates and time and others that may influence the criminal justice process.

II. Digital Forensics Track:

Digital Forensics Specialist: The main job of a Digital Forensics Specialist is to perform recovery and investigation of material found in digital devices. The Digital Forensics Specialist has a technical background and has to be able to apply knowledge of computer forensic principles in the identification and collection of digital evidence.

Skills needed:

- Advanced cybercrime awareness

- Advanced knowledge of legal and jurisdiction issues
- Processing of digital evidence while maintaining the chain of evidence
- Expert knowledge in one or more forensic areas
- Familiarity with different operating systems and applications and file structures
- Knowledge of relevant commercial and open source tools
- Knowledge of scripting/programming and database querying (SQL)
- Understanding of forensic artefacts and data carving
- Knowledge of both post mortem and live data forensics
- Data Recovery
- Mobile Phone Forensics

Advanced Skills:

- JTAG
- Chip Off
- Memory Forensics
- Malware Analysis and reverse engineering
- Cloud Forensics
- Decryption

III. Investigations Track:

A. General Investigator is the police officer that handles criminal cases in a wide variety of police operational units. This investigator handles increasingly more technological related issues regarding the cases that he is required to solve and needs good cybercrime and digital forensics awareness skills.

Skills needed:

- Responders track plus:

1. Technical skills:

- General Cybercrime awareness including types of cybercrimes and other tech enabled crimes
- Internet basics – URL, DNS, Domain names and IP addresses ISPs
- Email investigations and other communication technologies including time zones
- Proxies and anonymous investigations
- Social media and Open Source Intelligence (OSINT)
- Anonymization techniques concepts
- Virtual Currencies concepts
- Digital crime scene examination skills, including seizing of electronic evidence, chain of custody and presenting evidence in court
- Mobile applications
- Malware
- Preservation of Digital Evidence
- Modus Operandi
- Biometrics – Authentication methods
- Social Engineering
- Money laundering

2. Legal skills:

- Penal Codes, Procedure Codes, Evidence Acts, Special Laws (IPC, CrPC, IEA, IT Act etc.)
- Requesting and processing subscriber information and data from third parties
- Fundamental knowledge of legal and jurisdiction issues (LRs and MLAT Requests)
- How to present evidence in court

B. Cybercrime Investigator is an investigator, who is specialized in cases involving high technology or very technical aspects such as cybercrime, cyber-attacks, etc. and needs very strong computer networks investigative skills.

Skills needed:

- General investigator pack plus:

1. Technical skills:

- Advanced computer technologies including network security and vulnerabilities, open system interconnect (OSI) and network protocols (e.g., Transmission Control Protocol and Internet Protocol [TCP/IP], Dynamic Host Configuration Protocol [DHCP]) and directory services (e.g., Domain Name System [DNS]),
- Knowledge of data interception and traffic analysis methods and performing packet-level analysis using appropriate tools (e.g., Wireshark, tcpdump)
- Knowledge of system and application security threats and vulnerabilities (e.g., buffer overflow, mobile code, cross-site scripting, Procedural Language/ Structured Query Language [PL/SQL] and injections, race conditions, covert channel, replay, return-oriented attacks, malicious code)
- Knowledge of which system files (e.g., log files, registry files, configuration files) contain relevant information and where to find those system files
- obfuscation/anonymisation techniques,
- common operating systems (file systems)
- network topologies
- virtualization
- logging and analysis
- web technologies
- data storage systems
- encryption methodologies
- Knowledge of content development
- Extract data from local devices
- Malware Analysis at a deeper level
- File formats
- Scripting
- Pattern Analysis for multimedia files
- Ability to engage private sector or other countries to find solutions

2. Legal skills:

- Penal Codes, Procedure Codes, Evidence Acts, Special Laws (IPC, CrPC, IEA, IT Act etc.)
- Requesting and processing information and data from third parties

- Knowledge of the impact of legislation on technology crime-related investigations
- Advanced knowledge of legal and jurisdiction issues
- Individual organizational policies and procedures
- Knowledge of international frameworks, protocols and conventions.
- Advanced knowledge on how to interact with international organizations

IV. Intelligence Track

Cybercrime Intelligence Officers/ Analysts are identifying and producing intelligence on cybercrime from raw information; assembling and analyzing multi-source operational intelligence; preparing and presenting intelligence briefings; preparing planning materials for photographic reconnaissance missions; analyzing the results, preparing reports.

They are required to prepare graphics, overlays and photo/map composites; plotting imagery data using maps and charts; providing input to and receive data from computerized intelligence systems; maintaining intelligence databases, libraries and files.

Skills needed:

- Strategic and operational crime analysis
- Big data management and analysis
- Advanced cybercrime awareness
- Analytical and visualization tools
- Computer networking fundamentals
- E-discovery techniques
- Social networks and Open Source Intelligence (OSINT)

V. Management Track:

A. Cybercrime / Digital Forensics Head of Unit (SP / DCP): These professionals deal directly with cyber investigators and experts. They should take informed decisions in cybercrime cases or in other complex investigations involving cybercrime elements. Their role is to coordinate staff, allocate resources and prioritize policing activities. They should have detailed overview of the capacity, capabilities and needs of the unit and provide it with the relevant training and tools that enable or facilitate investigation and examination of the evidence. Another function is to represent the unit when dealing with external stakeholders.

They need at least a minimum of hands-on practical experience to evaluate operational and strategic activities and the ability to communicate effectively with their staff and external experts.

Skills Needed:

- Profound knowledge of cybercrime and cybercrime offences
- Advanced knowledge of legal and jurisdiction issues
- Knowledge of the institutional frame-work for international cooperation

- Knowledge of relevant investigating procedures
- High-level knowledge of investigating and forensic tools
- Knowledge of training needs and available resources
- Staff management skills
- Budget management skills
- Project proposal drafting skills
- Relationship management and soft skills
- Communication skills (incl. presentation skills)
- Ability to communicate the needs to higher hierarchy
- Foresight capabilities

B. Heads of Police Forces (DGP) are the Law Enforcement Managers, who are responsible for creating and executing strategic initiatives to increase efficiency of policing activities while dealing with obstacles such as legislation changes or staff turnover. They influence key external stakeholders and promote the organization in the media. They establish policies and procedures for the organization to follow and manage and allocate available resources.

This group should benefit from advanced awareness on cyber crime. The actors should be able to maintain an effective working relationship with the head of the cybercrime unit and represent cybercrime policing in the media. At a general level, the cyber related threats, legislation, opportunities and limitations must be understood.

Skills Needed:

- High level cybercrime awareness
- Knowledge of legal and jurisdiction issues
- Knowledge of the institutional framework for international cooperation
- Staff management skills
- Budget management
- Relationship management and soft skills
- Communication skills
- Knowledge management
- Abilities to speak about the unit externally
- High knowledge on policies and local environment regarding cyber
- Awareness on particularities regarding seizure and local procedures

VI. Judiciary Track

A. Judges / Prosecutors handle a wide variety of criminal cases. They should get an awareness of how crime can be `facilitated by technology and what digital evidence is and how it can be used in a case.

Skills Needed:

- High level cybercrime awareness including concepts of the following nature:
  - i) General cybercrime awareness including types of cybercrimes and other tech enabled crimes

ii) Internet basics – URL, DNS, Domain names and IP addresses ISPs

iii) Email investigations and other communication technologies including time zones

iv) Proxies and anonymous investigations

v) Social media and Open Source Intelligence (OSINT)

vi) Deep Web and Virtual Currencies concepts

- Knowledge of legal and jurisdiction issues
- Knowledge of the institutional framework for international cooperation

B. Specialized Cybercrime Judge/ Prosecutors are specialized in prosecuting/judging technology enabled crime cases or specifically cybercrime cases. They need specialized cybercrime investigations and digital evidence skills.

Skills Needed:

- Profound knowledge of cybercrime and cybercrime offences
- Advanced knowledge of legal and jurisdiction issues
- Knowledge of the institutional framework for international cooperation
- Knowledge of relevant investigating procedures
- High-level knowledge of investigating and forensic tools
- Knowledge of training needs and available resources
- Staff management skills
- Relationship management and soft skills
- Communication skills

ii. New and emerging crimes, in addition to above, require the knowledge of following domains besides understanding of the *modi operandi* of the above crimes:

- Criminal Intelligence Analysis and use of various analytic tools including OSINT
- Use of INTERPOL tools and Databases in Criminal Investigations and fugitive tracking
- Obtaining foreign located evidence (Mutual Legal Assistance)
- Seeking Extradition of fugitive criminals
- Admissible Recovery and seizure of digital evidence
- Obtaining foreign located Digital Evidence
- Tracing, attachment and confiscation of proceeds of Crime
- Undercover Operations ((wherever law permits)
- Lawful Interception (Surveillance) including Telephonic, electronic and environmental surveillance

Training Methodology:

(a) There is a strong need for a standardized recognized certification in fighting New Crimes like cybercrime. A large majority of the digital forensics specialists and cybercrime investigators are required to testify in court and so they are constantly being challenged

on the basis of their certifications and professional knowledge. There is a need to setup a standardized certification that can be nationally accepted and recognized and which could be presented in courts to further testify for the strong cybercrime investigations, or digital forensics knowledge of the holder.

(b) There is a need to setup a certification system, based on the proposed training system described above. This training curriculum will provide law enforcement officers with three certifications:

i) Certified in Cyber Fundamentals

ii) Certified Cyber Specialist

iii) Certified Cyber Expert

(c) In order to obtain the Fundamentals certifications, trainees will need to complete the introduction online modules for all the tracks and the classroom based modules from the Basic level for their specific track providing a general overview on cybercrime and other types of online investigations techniques and digital evidence.

(d) In order to obtain the Specialist certification trainees will need to complete all the Core trainings for the specific track they are following and two other modules of their choice, either from the same track or from the others, be it from Core or Intermediate/ Advanced levels.

(e) For the Expert certification, trainees will have to complete all the core modules for their track plus six other modules, either from the same track or from the other tracks, from Core or Intermediate/Advanced skill sets.

(f) This is a standardized, modular system and certifications need to also be offered to trainees, who have successfully completed training modules delivered by other organizations, law enforcement agencies or academies, as long as they can prove that the modules they completed fit within the framework of the standardized course curriculum and the topics and skills acquired are similar.

(g) This system provides a standardized approach with a curriculum that is modular and highly adaptable to each person‘s needs and interests while still providing core fundamental skills needed for each track.

(h) The basic requirements for all the professional tracks should be fulfilled through the online module. **E-Learning modules** using electronic educational technology in learning and teaching, can be utilised for online personalised, interactive or virtual education, enabling dissemination of information and provide knowledge as tool for capacity building and optimizing resources.

(i) The **UNODC Global eLearning Platform,** launched in September 2014 is an example in this area. The UNODC Global eLearning Programme develops learning contents in collaboration with UNODC senior international experts in each specific thematic field. Current security and human threats such as transnational organized crime, illicit drugs, trafficking in persons and smuggling of migrants, and issues relating to border control, forensics and laboratories, controlled deliveries, security and travel documents, intelligence, HIV and AIDS and human rights are covered by 21 courses. During 2014 to 2016, as many as 24,876 officers from

185 countries (428 from India) are taking benefit of the UNODC Global eLearning Platform.

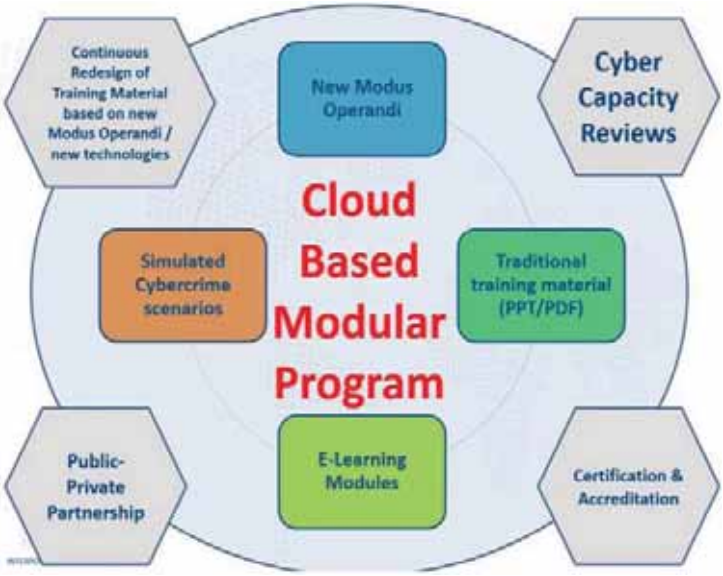
(i) The **INTERPOL Global Learning Centre (IGLC)** is a web-based portal giving authorized users access to a comprehensive range of online learning products. The IGLC is aimed at the wider police community across the world. Its goal is to encourage the sharing of knowledge and best practice between INTERPOL member countries as well as providing the opportunity for interactive e-learning. IGLC contains a wide catalogue of e-learning courses as well as an online library of resources with a wealth of links to reports, documents and websites of law enforcement organizations. This is complemented by resources from other relevant bodies such as universities, police colleges, academies and training institutions.

(k) Distance education of Law Enforcement Officers and Prosecutors is also possible through a massive open online courses (MOOCs) and E Books.

(l) Cybercrimes introduce unanticipated risks and effects, creating greater urgency to equip investigators with new skill sets. One such area is the establishment of a cloud computing training platform that comprises a networked and nodal nature, parallel to that of cyber security.

(m) Cyber Range or Simulated Cybercrime Scenarios are the key component of such a training model. Besides preparation of traditional modes of training through books, boards, power point/PDF-based approach, there is a strong need for more training based on simulated environments. This would mean creation of scenarios, including digital exhibits (logs, etc.) for extraction by trainees using forensic tools preloaded on the infrastructure, using appropriate procedures.

(n) This platform can be pivotal to increase shared knowledge and skills for investigators and connect LEAs and stakeholders. This cloud-based training system could encompass functions depicted in the diagram[2]:



2. "National Capacity Strengthening to Combat Cybercrime", Madan Oberoi, July, 2016, http://www.digitalpolicy.org/national-capacity-strengthening-to-combat-cybercrime/

(o) New modus operandi: In cyberspace, criminals keep on adopting new modus operandi every day and therefore, simulation-based training methodology has to be contemporary. To develop new scenarios, it is important to keep abreast of new modus operandi and technology trends. This part would include:

i) Knowledge exchange on current and emerging methods of operations (or modus operandi) of cybercriminals

ii) Within this platform, training courses could stress-test the computing skills of cybercrime experts to analyse and discern signals collected from hacker forums, internet relay chat rooms and messaging texts

iii) Attacks like phishing and tampering, advanced persistent threats, backend systems and reverse-engineering could be simulated.

iv) Combating cybercrime could take more than technical skills and require cross-disciplinary knowledge. Researchers must look at the best practices to stay ahead of hackers by understanding indicators of malware victimisation, the ecology of trust and motivation among hackers, online hacker communication and interaction styles

v) Gaining practice in such knowledge exchanges could shed light on how hacker communities interact and share information, creating actionable intelligence for cybercrime investigations

(p) Continuous redesign for training material: Feedback gathered from learner usage and experience must be utilised to design new knowledge capacity and material. The modules should be developed by subject-matter-experts, ensuring quality content is constantly updated. Training courses should be more reflective of real-world cases and incidents

(q) In order to maintain engagement with users, tapping into learners' interests can be done through offering appropriate challenges and increasing motivation

(r) Synchronised skill levels: This platform will allow new relationships with other nodes within the networks of the cybersecurity architecture. Effective collaboration and greater harmonisation will provide a more accurate and comprehensive assessment of cyber criminality, ensuring responses are coordinated, effective and timely response.

Partnerships:

(a) **UNODC: Established** in 1997 through a merger between the United Nations Drug Control Programme and the Centre for International Crime Prevention, UNODC is a global leader in the fight against illicit drugs and international crime. The capacity-building assistance UNODC provides inter alia includes:

i) Specialized training for practitioners and policy makers involved in healthcare, law enforcement, criminal justice and other priority areas.

ii) A wide array of operational tools, guides and practical resources, including handbooks, manuals, software, databases, case studies, assessment instruments, training modules and other resources and reference tools.

iii) Collection, dissemination and promotion of best practices and lessons learned, and develops guidelines based on them.

iv) developing online networks and databases to support international cooperation and information-sharing.

v) encouraging interagency coordination and crossborder operations, particularly in efforts to halt trafficking and other forms of transnational crime.

vi) fostering interdisciplinary dialogue and knowledge-sharing

(b) **INTERPOL**: INTERPOL is the world's largest international police organization, with 192 member countries. Police training plays a key role in INTERPOL's overall mission to promote international police cooperation. INTERPOL helps to build the capacity of police in our member countries, equipping them with the knowledge, skills and best practices needed to meet today's policing challenges. INTERPOL's wide range of initiatives is designed to bridge the gap between national and international policing and help law enforcement agencies make maximum use of the services provided by INTERPOL. Partnerships with the public and private sectors ensure the continued relevance of our training courses and access to the latest thinking and expertise. Operational training courses cover specialized crime areas – such as terrorism, drugs and trafficking in human beings – as well as investigative support tools, such as forensic techniques and the use of INTERPOL's network and databases. Other programmes are aimed at senior officers with responsibility for international police cooperation, Police Leaders.

(c) **CEPOL**: CEPOL is an agency of the European Union dedicated to develop, implement and coordinate training for law enforcement officials. CEPOL's official name is "The European Union Agency for Law Enforcement Training". CEPOL's headquarters are located in Budapest, Hungary. CEPOL brings together a network of training institutes for law enforcement officials in EU Member States and supports them in providing frontline training on security priorities, law enforcement cooperation and information exchange. CEPOL also works with EU bodies, international organisations, and third countries to ensure that the most serious security threats are tackled with a collective response. CEPOL's current portfolio encompasses residential activities, online learning (i.e. webinars, online modules, online courses, etc.), exchange programmes, common curricula, research and science.

(d) **FBI**: The FBI also offers international training to foreign national police agencies via its International Law Enforcement Academies (ILEA), which deliver courses on leadership and investigative techniques, as well as specialized seminars on several security issues. The FBI heads facilities in Hungary, and offers seminars at national police academies located in Thailand, Botswana, and San Salvador.

(e) Law enforcement collaborations with the private sector can be used to explore and design complex simulations of future communications technologies that are prone to criminal exploitation, improve cyber security skills at all levels and work with associated professions to make industry more resilient to cybercrime.

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"Tourism Policing"

TOURISM POLICING

Introduction

Today, tourism is one of the largest and dynamically developing sectors of external economic activities. Its high growth and development rates, considerable volumes of foreign currency inflows, infrastructure development, and introduction of new management and educational experience actively affect various sectors of economy, which positively contribute to the social and economic development of the country as a whole. In early 2016 global tourism has experienced a consistent stable growth driven by key events and the implementation of successful marketing activities by nations all over the world. In spite of all those favorable factors for the smooth augmentation of tourism industry, still there exist bottlenecks, which hamper the industry constantly.

Safety and security is a much spoken issue among nations with tourism as the backbone of their economies. Safety and security are vital for providing quality service in tourism. More than any other economic activity, the success or failure of a tourism destination depends on being able to provide a safe and secure environment for visitors. It is undeniable that the tourism industry has a right to defend itself as well as to have a legitimate expectation that the government will ensure safety and security. It must be recognized that when the environment is safe, the visitor is also safe and that if the Law enforcement machinery emphasizes on tourist security, it will not only give tourism a fillip but also pave way for the industry's future growth.

Current Scenario of Tourism in India

Tourist arrivals in India have registered steady growth in the last decades and the tourism statistics revealed by Press Information Bureau, Ministry of Tourism; Government of India (May 2016) is summarized as follows. Indian Tourism has registered a growth of 10.7% in Foreign Tourist Arrivals (FTAs) in April 2016 over the same period in 2015. Bangladesh accounts for highest share of tourist arrivals followed by USA and UK in April 2016. Rs. 11, 637 crores of Foreign Exchange was earned through tourism in April 2016. The domestic tourist visits to all the states/UTs have also been registered with a steady growth rate. The statistics from 1997 shows that percentage change in terms of tourists visits were always on or above 10% in most of the years except during the economic slowdowns in some years. The growth rate was on a snail's pace especially in years like 1998 with 5.2%, 2001 & 2005 with 7.4% and 7% respectively. In 2012 the growth has hit the all-time best with 20.9% where the number of tourist visits to all states/UT's were 1045.05 million. In 2014, the domestic visits have recorded a growth of 11.9% with 1281.95 billion tourists who visited the states and UTs.

Importance of Safety and Security in Tourism

The safety and security of the tourists is one of the essential prerequisites for a sustainable long-term growth of this sector. The safety and security considerations become paramount for the tourists during their travel, their stay and their visit to tourist destinations. Law and order being a State subject, the safety and security of tourists is primarily the responsibility of State Government/UT administrations. Some of the State Governments have deployed Tourist Police for the security and safety of the tourists from their existing Police set up. However, this is not a committed force and there is always a possibility of their re- deployment in case of other pressing law and order situations.

Furthermore, it has been felt that many states have not deployed Tourist Police due to budgetary constraints for tourist security. Therefore there is a need for earmarked Police organization, the personnel of which can be deployed at important tourist destinations/circuits with all objectives of ensuring facilitation, guidance, safety and security to the tourists visiting the place. Furthermore, the personnel deployed for this job should be appropriately trained so that they have an attitude and capabilities of facilitating and guiding the tourists.

Crime against Foreign Tourists

The highest incidents of crime against foreign tourists were reported in Delhi, which accounts for about 135 cases (35.2%) out of total 384 cases reported in the country. This is followed by states of Goa (66 cases), Uttar Pradesh (64 cases), Rajasthan (31 cases), Maharashtra (25 cases), Bihar (13 cases) and Karnataka (11 cases).

Under Crime against the tourists, most of the cases were reported under theft (223 cases) which accounts for about 58.1% followed by assault on foreign tourist women with an intent to outrage her modesty (33 cases), robbery (21 cases) and rape & cheating (17 cases each). A total of 28 cases and 26 cases were of unclassified category under IPC, Other SSL and other category respectively. Out of the total crimes against foreign tourists reported in the country in 2014, most of the crimes have been reported in Delhi (97 cases) which accounted for 43.5% of such crimes reported in the country and is followed by the states of Goa (36cases), and Uttar Pradesh (29 cases) during 2014.

Maximum cases of assault on foreign tourists (women) with intent to outrage her modesty were reported in Delhi (9cases) followed by Uttar Pradesh (6 cases) and Kerala & Goa (4 cases). These four states together accounts 69.7% of total such cases reported in the country during 2014. Out of 17 rape cases against foreign tourists in the country, 6 cases in Delhi, 3 cases in Karnataka, 2-cases each reported from the states of Goa, Rajasthan, Tamil Nadu and West Bengal. Cases of murder (4) and cases of insult to modesty (3) of women under crime against foreign tourists were reported in 2014. Out of 21 cases of robbery against foreign tourists, 8 cases and 4 cases were reported in UP & Maharashtra respectively.

(Source: Crime in India 2014-NCRB)

Tourist Police –Suggested Scheme

"Police" is the subject defined and enlisted under the state list (list-II) of the Seventh Schedule of the Constitution of India, which form the extensive domain of each one of the state governments within India. The point No: 2 of State List indicates "Police (including railway and village police) subject to the provisions of Entry-2 A of list – I". So it is suggested that the Tourist Police should be in the control of state government like general police. However, Ministry of Tourism, Govt. of India can provide financial assistance to the state government for effective implementation of the scheme. Under the scheme, a pool of trained policemen would be made available to render policing service to the tourists and would control the crimes at the places of tourist interest.

The rules of the district police of the concerned state shall be applicable to the Tourist Police, unless the contrary appears from the content in this scheme.

Duties and Responsibilities of Tourist Police

The Tourist Police personnel shall be deployed in the major tourist attractions including

monuments, entry and exit points i.e. airport, railway stations and bus terminals; religious places, shopping area, entertainment area etc. which are prone to overcrowding especially during tourist season. The market areas where tourists mingle with touts, hawkers and shopkeepers are one of the areas identified prima-facie for the implementation of the scheme.

For the purpose of performing their duties under the scheme, the Tourist Police personnel shall patrol the areas assigned to them. The Constables engaged in patrolling shall report to the Sub-inspectors of the concerned Tourist Police Station. In case of any violations found during the patrol, the same shall be communicated immediately to the Officer-in-charge of the Police Station concerned for timely effective action against such persons. The following shall come under the purview of Tourist Police:

- The prevention of crime and the maintenance of law and order in the tourist destination.
- To obtain knowledge of the people addicted to the crime at tourist attractions and to maintain adequate supervision over them.
- To ensure that all cognizable crime are reported and registered as well as the tourists are encouraged to give full information in this respect.
- Taking charge of the kiosks, which act as reporting points for tourists in case of any security breach or for availing any similar kind of services.
- Curbing the activities of touts, beggars and hawkers of the concerned area.
- The entry of unauthorized people, beggars and persons hawking articles for sale in the tourist areas shall be reported as and when it is required.
- Making the travel of the tourists hassle free by immediate intervention in case of any mishap.
- Providing emotional support to the victims when they are cheated, their belongings are stolen, or whenever they fall prey to any other mischief or wrong doing.
- Imparting information to the tourists about locations, transport systems, facilities in the destinations, legal information, information about authorized shopping centres, information regarding medical help in case of physical assault etc.
- Every Tourist Police person should show civility to all tourists and advice where they can get appropriate transport, accommodation and other services needed.
- The tourist police person should be able to intervene in the event of pick pocketing, eve teasing, harassment.
- The Tourist Police person should also interfere in case the tourists are involved in drug trafficking and consumption.
- Sensitizing tourists regarding the law and order system in the state like rules related to accommodation, entry/exit rules, reporting at local police stations, special permits; security conditions at the destination; social and cultural taboos and other local conditions
- Tourist police should assist tourists while dealing with foreign currency exchange and guide them to do the

same in authorized exchange counters and banks.

- To deal with immigration issues and liasioning with Foreigners Regional Registration Offices (FRROs) at entry/ exit points as and when it is required
- Restricting the entrance of unlicensed tourist guides and other unauthorized agencies into the destinations and places of tourist interest.
- In case of beach destinations and water-based destinations the tourist police should be provided with an aquatic wing to enhance the security of the tourists

Tourist Police Station

- Tourist Police Station means any kiosk, post or place declared generally or specially by the state government at the tourist destination to provide policing service to the tourists. This Tourist Police Station will work under the jurisdiction of district police (Superintendent of Police) for all policing purpose. To make the Tourist Police Station more visible the following specification can be followed. The Tourist Police Kiosk/Station should be a temporary/moveable set-up made of fiber and glass preferably of 20 feet x 15 feet size fully furnished with basic facilities like Tables, Chairs, Small wardrobes and washroom. For catching the attention of the tourist, the kiosk can be designed using the combination of two prominent colours. The name of the tourist police station with the concerned state government & State Police logo should also be displayed. The logo of "Incredible India" should be engraved in a prominent place of the kiosk since it is an establish tourism brand of the country. The size of the kiosk may differ from one state to another but the colour and design of the kiosk should be uniform. The tourist police stations will be in charge of a Sub-Inspector as Officer-in-charge. Within the units of his jurisdiction the officer-in-charge of Tourist Police Station is responsible for the effective working and management of the police sub-ordinates attending to him to provide best services to the tourist. So far safety and security is concerned Tourist Police should try to establish meaningful relationship among the tourists, service providers and police.

Hierarchy of Tourist Police Personnel

In each state the Tourist Police shall be under the control of Deputy Director (Tourist Police) who shall be specially selected by the Government (Tourism & Police Department). The Sub-Inspectors and a pool of Constables including Head Constables will work under his supervision.

The Director, Department of Tourism of concerned state government will be the Coordinating Officer for Tourist Police. However, the Superintendent of Police (SP) of concerned district will be the reporting officer and shall have the operational control. The Dy. Director (Tourist Police) will coordinate with SP office &with Director, Department of Tourism. The Tourist Police shall abide by the directions given by the immediate superior at the tourist destination where they are deployed. The hierarchy of the Tourist Police at a tourist destination shall be as follows:

Deputy Director (Tourist Police)
(Jurisdiction whole of the state)

Sub-Inspector
(Officer-In-charge, Tourist Police Station)

Head Constables
(Area of Operation- Tourist Destination where deployed)
Constables

Training of Tourist Police Personnel

After the selection/recruitment, Tourist Police personnel should undergo the training at the designated training centre for district police as per the training modules related to general policing. Besides that a training programme of two weeks shall be organized to train and equip them with the security related requirements of the tourism industry. The training programme shall be structured in a holistic way by incorporating various aspects viz behaviour and attitude; law enforcement; inter-personal; cross-cultural; skill development and attractions and destinations of the concerned area. The responsibility of training the police personnel shall be entrusted with the reputed professional tourism institutes (Govt. approved) for example: *Indian Institute of Tourism and Travel Management (IITTM), An organization of Ministry of Tourism, Govt. of India etc.*

Suggested Course Design

Training Need	• To enhance the knowledge on tourism industry in general and need of tourist in particular. • For developing the skill to take care of tourist and to provide policing service to the tourists.
Entry	Newly appointed and deputed Tourist Police Personnel.
Duration of training	7 days (8 hrs. per day)
Language	English
Venue	As decided by concerned State Government preferably at a tourism professional Institute.
Model of Syllabus of the Programme	**Topics** • Conceptual Framework of Tourism Industry • Concept of ***AtithiDevoBhava*** • Travel formalities • Tourism Attractions of the concerned state/area. • Facilities & amenities for Tourists available in the concerned state.

	• Understanding Group behaviour • Professional need for Tourist Police • Communication skills & personality development • Code of Conduct of Tourist Police • Etiquettes, manners, attitude, behavior of Tourist Police. • Cross cultural management • Self/Stress Management • Different schemes of India Tourism and State Tourism like ***Swachh Bharat Abhiyan*** and **E-Visa** etc. • Handling emergencies
Refresher Training	During the service every alternative year the tourist police will attend refresher-trainingprogramme, which will help them improve professionally. *The model syllabus can be modified as per the need of the organization*.

– Shri Arun Kumar, ADG, BSF
– Shri Raja Shrivastva, IG, AGRA
– Shri Gaurav Yadav, SP, Jaisalmer
– Shri Sushant Gaur, Sr. SI, Agra

"Concept Note on Policing in Smart Cities"

CONCEPT NOTE ON POLICING IN SMART CITIES

With the increasing demographic shift to urban centres, it is important that the urban landscape and its functional ecosystem are ready to bear with the spurt in population, economic activity and the system inter-dependencies that are going to be concomitant with the urban growth. To meet the challenge of creating efficient processes that are future-ready, citizen-friendly, scalable, replicable and robust, it is important that the systems are smart, logic-driven, self-improving and intelligent. All these aspects are covered under the Smart City concept, which the government has been implementing at a pan-national scale. The 'Smart City Mission' was launched by the Hon'ble Prime Minister on 25.06.2015 in furtherance of the objective of creating modern urban centres that can meet the expectations of the urban dwellers in the 21st century.

From the perspective of public services, the important elements of a Smart City involve:

- Citizen-friendly and efficient delivery of public services.
- Proactive resolution of public issues and grievances.
- Self-improving processes and systems in terms of efficiency, robustness and resilience.
- Minimal interference and inconvenience to the citizens in their day-to-day pursuits.
- High adaptability to new technologies and processes with the objective to perform a leadership role for other urban centres.

Since policing is an important service that the state provides to its citizens, hence, in a smart city, the service delivery in respect of police-related services such as citizen-safety, public order maintenance, criminal investigation, information security, etc are also required to be aligned with the smart city concepts enumerated above. However, unlike other citizen services and their delivery to the public, policing faces several challenges in a smart-ecosystem, and many of these challenges stem from the very technologies that are so integral to the smart city processes and systems. Thus, for example, the digitisation, automation and the integration/convergence of all systems and processes, while making the systems more efficient, also, at the same time, increases the digital security vulnerabilities of such systems. Further, the integration and the inter-dependencies, while reducing duplication and improving decision-making, also makes the systems susceptible to sudden, large-scale collapses due to cascading effect of minor system breaches.

Further, as it could be made out, the smart cities, due to their intrinsic nature, will be data driven. Thus, data of various parameters will be captured at multiple functional points for the purpose of intelligent, efficient operation of the smart city. This data will also include inputs on individuals' biometrics, location data (personal devices, vehicle, etc.), transaction (financial, social) data and individuals' behavioural data. The smart city systems will be teeming with such data and it is important that the law enforcement agencies undertake the following activities in respect of this data:

- Firstly, it is important that the Law Enforcement Agencies (LEAs) ensure that this data is secured and protected, in view of its privacy implications.

- Secondly, the data, at the public (statistical) level, is utilized by LEAs for efficient emergency response, for proactive interventions in issues related to public order & traffic management and for preventive policing.

- Thirdly, at the level of direct and specific intervention, the data may be utilized for action against desperate criminal elements (persons with past history of repetitive, violent crimes), absconders, POs, and for tracing missing persons, stolen vehicles, smart devices, etc.

The above template of policing in a smart city will require a combination of policing infrastructure for data capture and collation, data integration, data analytics, output-data dissemination, response setup, feedback capture/collection, etc. This has to be supported by an R&D setup comprising of data analysts, research fellows and an incubation centre, for testing and adapting new technologies for policing roles.

Thus, the broad components of a smart city police setup may be as follows:

(a) A city-wide surveillance and monitoring setup comprising of CCTV cameras, field sensors (RFID, gun-shot, etc.)

(b) An enterprise-level intelligent database integration setup to enable all smart city systems and databases to share data and draw intelligent linkages.

(c) A database analytics engine to process multiple databases and live data from multiple feeds for real-time generation of actionable inputs.

(d) A setup based on machine learning, deep learning and AI for making the data analytics and decision-algorithms self-improving.

(e) A setup for extracting data from open sources and for harnessing crowd-sourced inputs. Community policing in a smart city could be undertaken through community groups on social media, group-messaging applications, civic amenity Apps, etc. The data generated through community policing initiatives should be integrated with other databases for generation of actionable intelligence.

(f) An intelligent traffic management system for dedicated handling of vehicular traffic data feeds, analytics, response systems, etc.

(g) A central command, control and coordination centre for bringing all the above components under one roof for better functional coordination, especially of response systems.

(h) A dedicated data network with built-in redundancies for transmission of data (input/output) captured and generated in respect of the law-enforcement processes within a smart city. The dedicated network is essential for ensuring security of the private data of the citizens captured in course of policing activities and also for ensuring system robustness, especially for emergency response functions and during maintenance of public order.

(i) An Information Security/Cyber Security setup for ensuring security of

the databases, applications and tools that form the backbone of the smart city intelligent decision making system.

(j) An Incubation & Adaptation Centre for studying new technologies, analysing them in respect of smart city policing requirements and if found promising, customizing and adapting them to smart city policing tasks.

The specific components that will cater to the above requirements are:

(a) City Surveillance and Monitoring System – Public CCTV Surveillance System

(b) C4i and Emergency Operations Centre (EOC)

(c) Intelligent Traffic Management System

(d) Cyber Defence Directorate

(e) Police Cyber Highway

(f) Incubation & Adaptation Centre / Technology Cell

(g) Community Policing

City Surveillance and Monitoring System – Public CCTV Surveillance System

I. INTRODUCTION

(a) The modern urban landscape of any metropolis is a buzzing labyrinth full of people on the move with their vehicles and gadgets, and engrossed in their various pursuits. While doing so, people generate tremendous amount of data, which if collected and analyzed, could help the smart cities in becoming more efficient, people friendly, safe and secure.

(b) Nothing exemplifies this concept better than the very popular Google application, the Maps. Thus, by intelligently using the GPS feeds from hand-held devices connected to the internet and on the move, esp. from mobile phones, Google Maps creates applications and use-cases that help users find the fastest route and also inform them about traffic congestion, delays, road-blockades, etc.

(c) Thus, smart city-wide surveillance and monitoring can help in policing by ensuring efficiency, ease of usage and safety in the ever-increasing chaos of urban systems.

II. City surveillance & monitoring shall be based on the following broad principles/ paradigms:

(a) It should be dynamic, intelligent and a self-improving system.

(b) The system should ensure privacy of common citizens through well-defined protocols for data capture and its access.

(c) The system should aid and assist the existing systems through technical interventions by improving efficiency,

reliability, speed & appropriateness of responses.

(d) The system should lay adequate emphasis on proactive problem-solving for effective redressal of grievances.

III. MAIN COMPONENTS

(a) Any city surveillance & monitoring system shall comprise of the following **broad components**:

i) Video surveillance of public places

ii) Monitoring of vehicular movements

iii) Capture of information available in public places – for person identification, vehicle identification, event identification, movement identification, utilities status, etc.

iv) Capture of behavioural inputs for identification emerging and potential areas requiring intervention.

v) Creation of databases for all relevant information concerning activities in public places.

vi) Analysis of real-time inputs received from city-wide input devices in respect of databases, patterns, etc.

vii) Response system and its integration with city surveillance and monitoring.

viii) Self-improving decision-making system based on machine learning and AI.

IV. POINTS FOR CONSIDERATION

(a) The city surveillance and monitoring systems shall have a dedicated Wide Area Network to link the various city-wide input devices – CCTV cameras, sensors, etc. – with a central facility.

(b) The city administration – Municipal bodies, police, transport authority, etc.- has several existing databases such as Utilities' user database, Vehicle Registration & Driving License database, CCTNS, traffic challans, jail release database, etc.

(c) A database integration facility to intelligently link all databases relevant for city-wide surveillance and monitoring is important for any city wide surveillance & monitoring system. These include among others, data on crime & criminals, vehicles registration data, live traffic feeds, demographic data, etc.

(d) An open source intelligence collection and monitoring tool (OSINT) for getting relevant data from openly accessible databases will allow for feeds from openly accessible online databases, esp. social media, blogs, etc. These databases are very contextual and contemporary and are of great help in identifying trends affecting city administration.

(e) A data analytics facility to derive intelligent linkages between the various databases including open source, and also between the databases and real time inputs received from field devices will augment the efficiency and accuracy of the responses generated out of the city-wide surveillance & monitoring system.

(f) An intelligent feed analytics facility which is based on machine learning will help in identification of actionable inputs from feeds received from field devices.

(g) A facility for integration of the actionable inputs – field device inputs & overlaid data – with the emergency response systems, such as PCR Vans, ERVs, CATS, etc. is essential for putting the entire system into action.

(h) The **salient features** of the proposed City surveillance & monitoring system are:-

i) Real-time generation of automated alerts and actionable inputs after processing live feeds from field devices in conjugation with various databases.

ii) Ability to add more use-cases to the system by adding additional data types and/or field devices. The WAN and the analytics engines shall be scalable to incorporate additional use-cases.

iii) Self-improving decisions making, based on machine learning through intelligent assessment of input feeds, response accuracy, relevance, etc.

C4i and Emergency Operations Centre (EOC)

The C4i of a smart city will be the central facility where all the inputs such as CCTV feeds, ANPR feeds, sensor data, emergency helpline feeds, SoS App feeds, LBS data, CCTNS and other crime-criminal databases, will get integrated in a functional manner to ensure smooth coordination in performing policing functions. The C4i will ensure the following:

(a) 24 X 7 CCTV surveillance of public places.

(b) Integration of location-based services and crime & criminal databases with real-time CCTV and other feeds for prompt and effective resolution of public safety issues at public places.

(c) Real Time Video Analytics based on AI and Machine Learning for generation of actionable alerts for preventive and curative response.

(d) Use of Video Analytics Tools: Facial Recognition System and Number-Plate readers for real-time tagging of crime & criminal information with specific time-stamped video feeds.

(e) Multi-tiered Command, Control and response set up at PS level, District level and Police Hdqrs. level for effective information sharing, planning, decision making and execution for prompt resolution of public safety related distress situation.

(f) Provision of Emergency Operation Centre (EoC) integrated with C4i as a dedicated Command Room to attend to individual public safety issues of serious nature.

(g) Integration with crime & criminal databases: CCTNS, Criminal dossier system, e-Challan system, JAIL release, JAIL visitors etc. for effective real-time analytics, suspect tagging and alert generation.

(h) Integration with Emergency Response Support System (ERSS, Dial 112) for real-time inputs on public safety related emergency calls.

(i) Integration with location-based services envisaged under ERSS for identification of exact location of public callers in distress (on demand).

(j) Location based CCTV feed sharing with field units: Police patrol vans, Police Station Emergency Officers, beat patrolling staff, Emergency Response Vehicles, etc. involved in redressal of public safety related distress situation.

(k) Integration with Himmat SOS Mobile App. for real-time inputs from women in distress.

(l) Audio Visual feed aggregation from relevant on-ground sources – Private/ Public IP based CCTV systems, etc. mapped over the C4i GIS application, Mobile-camera feed of Himmat App. Caller – and their real-time sharing with a ground staff tasked with redressal of distress-situation affecting a smart city resident in a public place.

The CCCC Centre (C4i) in a smart city should have these broad components:

(a) Interactive Video Wall with intuitive GUI.

(b) A high capacity database storage facility

(c) Database Integration Facility for bringing all existing policing databases on common platform

(d) A high-capacity data analytics engine with AI/ML capabilities

(e) Integration with ERSS, LBS and SoS Applications

(f) OSINT tool

(g) Picture Intelligence Unit for dedicated collection of PoI pictures from open source.

Intelligent Traffic Management System

I One of the pre-requisites of a smart city is availability of an efficient commuting system that provides end-to-end connectivity through reliable, comfortable, safe and affordable means.

The vehicular traffic in a smart city may be characterized by the following:

(a) Extensive usage of MRTS

(b) Hub-and-spoke model involving MRTS, with cluster buses (preferably electric buses), e-three-wheelers, and bicycles-on-rent for last-mile connectivity.

(c) Pedestrian friendly roads and traffic regulation systems

(d) Multi-level and underground parking for private vehicles

(e) Premium on usage of private vehicles in designated areas and during designated times, etc.

(f) Introduction of intelligent vehicles, followed by self-driven vehicles.

II Thus, a smart city will have all the essential elements of a traffic system that only needs an intelligent management system to ensure its smooth operation. The intelligent traffic management system in a smart city may comprise of:

(a) Sensors on roads for monitoring traffic density, flow, etc.

(b) Intelligent traffic signal management based on AI/ML for minimizing traffic built-up, clogging, waiting-time and for ensuring efficient utilization of road-space, alternate routes, etc.

(c) Interface between an individual's route preferences and traffic signalling systems for real-time traffic guidance and traffic optimization.

(d) ANPR Cameras, RFID scanners, sensors, etc. for traffic prosecution.

(e) Virtual lane marking and lane discipline through smart car controls.

(f) Smart traffic solutions for self-driven vehicles, including virtual signalling systems, virtual lanes, vehicle-clustering (for efficient bubble movement of vehicles moving towards common destination points/routes), etc.

In this regard, it is important that the civic authorities in Smart Cities constitute a Task Force or a Working Group that periodically monitors traffic flows, bottlenecks, public feedbacks, AI-based improvement suggestions, etc. and takes prompt action in resolving traffic-related issues. In this regard, it is important that the Head of the Traffic Police Unit as well as the road-building and maintenance agencies (PWD, MCsD, etc.) are given due representation in the Working Group.

Police Related Citizen Service Delivery in a Smart City

In a Smart City, it is important that the citizen avails public services with utmost ease of access, with adequate information about service choices, service terms & conditions, service deliverables/outcomes and service quality, and is assured about the fairness and truthfulness of the public services rendered. The citizen also expects a proactive management of the service outcomes and the citizen's satisfaction level through sustained follow-ups.

Thus, the essential requirements of a service delivery model that is likely to conform to these criteria are:

i) A standard, well defined service delivery system with objectively stated outcomes.

ii) A standardized flow-chart of various steps involved in the service delivery, their input requirements, their outcomes/ deliverables, time durations, etc.

iii) Minimal subjectivity and human intervention in the service delivery decision making.

iv) Feedback capture and its utilization in improving response accuracy and efficiency.

The policing related services should also be delivered in a Smart City as per the above proposed model. For instance, the most important service delivery done by LEAs is 'Registration of FIR and Investigation of Cases'. In a Smart City, the delivery of this service could be made through AI based Intelligent Complaint Registration Application hosted over the Internet or through smart, physical interfaces. This application may utilize Natural Language Processing, speech recognition and deep learning to identify sections of law, jurisdiction, etc. while registering a formal FIR. Such a tool will drastically reduce the human factor in the delivery of a very critical service, and by doing so, help curb attain standardized, truthful response, equal access and other benefits to the citizens. The LEAs operating in a Smart City should strive for developing more such tools for citizen service delivery.

Crime Data Analytics

Law and Order management is a prerequisite and an essential condition for the working of a smart city. Technology has, today, pervaded all aspects of life bringing upon new challenges for law enforcers. In this context, it is imperative that police evolves in an organic and holistic manner to face these challenges.

In this regard, new technologies, from robust surveillance systems to predictive algorithms, are transforming the law enforcement today. The development and dissemination of such new crime-fighting tools is rapidly increasing and in this post-modern narrative, being the police organization of a smart city, any police force will need knowledge management systems and models while dealing with real time data and big data to enable itself to make an informed decision to cater to any eventuality.

PROBLEM ARENA AND NEW AGE PARADIGM:

With the evolution of society, the new challenges being faced by police in law and order front are the issues of unregulated, motivated and flash mobs. Butterfly principle prevails wherein some incident in one part of the globe can cause unrest in other part of the world, induced by social media or otherwise. Adding to the issue of prediction is the inability of intelligence sharing in real time and also the purview of compliance of human rights. On crime prevention and detection front, especially the intelligence collection side, technology can play a tool in ensuring better predictive and evidence based policing.

TECHNOLOGY AS A SOLUTION:

- **Social Media Monitoring and Analysis**: Today, social media has become a major tool for creating

propaganda, connecting and mobilizing mass movements. It is imperative to supplement the traditional policing with social media monitoring tools which keep a tab on pulse of the netizens and generate red herrings wherever required. The department of Homeland Security in USA uses such tools to analyze people who are vulnerable and to counter violent extremism by keeping tabs on any sensitive information via keyword surveillance. Along with the analysis and detection, the tools will also focus on correcting / clarifying the misrepresentations in circulation on social media.

- **Use of Video Suveillance with AI Component as Major Part**: With the advent of the culture of flash mobs and unregulated unrests, the effective monitoring of the public, especially the movement as well as the identification has become a limitation without the scientific aids. It is therefore needed that in a smart city, the CCTV Cameras network be integrated with the C4i in PHQ to monitor the individuals involved in organizing and participating in such crowds. Further, the Police can use body-worn cameras to create a video pool of information of such participants. These body-worn cameras also serve as a deterrent in managing law and order. Use of surveillance drones can also be emphasized upon for aerial surveillance which will serve the same purpose. Further, the drones provide additional maneuverability in blind spots to keep more effective check in law and order maintenance. In this regard, it is pertinent to mention that a successful integration with all stakeholders storing data is required to generate real-time action points, but this has to be done under a very strict protocol for retrieval of this data. Preventing misuse of this data and taking care of privacy issues will be a challenge for a smart city police in future.

- **Artificial Intelligence Tools as a Force Multipliers**: Use of facial recognition, sentiment analysis and audiovisual fingerprinting to analyze the pool of audio and video data collected to predict the crowd behavior as well as in identifying the miscreants/ repeat offenders. San Fransisco based Deep Science AI has developed Artificial Intelligence Surveillance (AIS) platform which uses deep learning to identifying real people concealing their faces/ firearms of intruders after-hours or where they shouldn't be, and alert a security analyst monitoring remotely. AI based cameras with the help of facial recognition and gait analysis technologies can also be used to suspect anomalies like unattended bags, suspicious crowd behavior etc.

- **Use of Financial Analysis Tools:** Tools are required to keep a track on suspicious financial transactions taking place online or over the dark web which is used to sponsor and organize

mass protests. It is a known fact that various organizations and vested interests attempt to destabilize the economies and create social unrest through sponsoring protests. To counter such efforts, FIUs should be integrated with policing systems and all transactions from identified individuals be kept a track upon.

- **Traffic Management:** Traffic patterns are highly unpredictable and movement of vehicular traffic and heavy goods is subjected to a great degree of uncertainty. By the use of AI, IR maps can be generated to create a model to allow management of traffic lights in such a way that prior to buildup of traffic either planned (Rush hours, VIP Routes) or unplanned (accidents, water logging etc) alternate routes can be opened up and traffic can be redirected to those routes. In addition they can also act as gateways for lifesaving ambulances and police vehicles to choose the most efficient path to reach a place of occurrence/ scene of crime.

- **Integration of BeatBook with CCTNS**: Delhi Police has a very robust beat policing system in which every beat officer maintains a comprehensive data of demographic information of their beat. This system can be integrated with the CCTNS to create a nationwide database. It can be effectively used for real-time verification of information sheets (Register no.12), real-time information sharing in a holistic manner in a smart city policing setup.

- **Use of Biometric Tools:** Through a network of both online and offline methods, biometric data such as fingerprints, facial and iris characteristics can be fed into a system to identify and create a working model for the back end to identify a particular person. This is efficient in tracing missing persons, absconders and potential movement of criminals across borders. In this regard various tools have been developed to supplement the efforts of police.

Use of AI for Crime Prevention: AI deep learning models coupled with crime mapping can be developed to analyze crime patterns and identify hotspots which act as a useful tool for predictive and preventive policing. Context-intelligent image analysis deep learning model can help identify networks through which sensitive data passes thereby reaching the perpetrator. There have been instances wherein such tools have been used effectively in cases of human and child trafficking by monitoring the networks at the telecom operator levels. There is a need for creating a nationwide database of criminals under various categories, which can aid the police in developing localized crime prevention strategies. In various countries, databases of sex offenders/ human traffickers/ drug peddlars etc serve the similar purpose. To check the interstate crimes, Integrated Prison and visitor records from CCTNS clubbed with AI based machine algorithms can aid the police in monitoring the activities of criminals across India. Use of satellite imagery can help a long way in metropolitan policing.

AI based on algorithmic software can also be used at the crime scene for immediate recognition of perpetrator based on modus operandi, pattern of crime/criminals in the area, biometric data, forensic data etc.

- **Creating Flawless Chargesheets:** AI has tremendous potential to create paperwork which today is done manually. A machine-learning algorithm can generate charge sheets specific to an incident with complete legal validity without any exclusions or non-conformity. This allows minimal manual intervention hence the scope for malicious intent is not there in any way and the ability of the legal system to prosecute to the fullest extent of the law is always available. In the charge sheet, references from other judgements as well as other outcomes can also be included to make it more effective. Today, most judgement level analysis has already moved to Artificial Intelligence based systems with zero manual intervention. It has been proven that AI based systems have outperformed lawyers as well as judges in some cases. A neural network based system over a period of time can also create sensor based inputs in order to predictively allow for the analysis of outcomes of cases as well, helping speed up the judicial process. The consequent burden on the policing system goes down.

Cyber Defence Directorate

Information and its flow will be the lifeline of a Smart City. It is important that this lifeline is secure, protected and shielded from external and internal attacks. For this purpose, it is important that a dedicated Cyber Defence Directorate is established under the police leadership with the mandate to ensure cyber security of the Smart City and its institutions and to protect the citizens of a Smart City from cyber crimes.

For this purpose, the Cyber Defence Directorate of a Smart City Police Force should comprise of:

(a) Emergency Operations Centre for 24X7 watch over the critical IT infrastructure of the Smart City.

(b) Cyber Security Centre for enforcement of information security policies across the various entities of a Smart City. This centre will work on the principle that a chain is as strong as the weakest link. Thus, the Centre will strive to strengthen each and every entity of a fully connected and integrated Smart City.

(c) Cyber Crime investigation Unit – for scientific investigation of complex cybercrimes that are likely to target institutions and residents of a Smart City. Action against cyber criminals is important to instill confidence in the digital backbone of the Smart City governance model.

(d) Cyber Awareness Unit – for keeping the residents of a Smart City well informed about the various cyber threats and the safe online habits needed to protect oneself from these threats.

(e) Cyber Intelligence Unit – The cyber space, by its very nature, is such that it can be accessed from anywhere across the globe. All that is required is appropriate credentials. Thus, cyber space is very conducive for intelligence collective and proactive interventions. In a Smart City, since there will be zero tolerance to system breakdowns, hence it will be imperative that the police agencies engage in proactive handling of cyber threats and their effective neutralization. The Cyber Intelligence Unit with participation from multiple stakeholders will help in attaining this objective.

– **Shri Sanjay Baniwal**, Spl. CP, Delhi
– **Shri M.M. Oberoi,** Spl. CP, Delhi
– **Shri Navniet Sekara,** IG, Uttar Pradesh
– **Shri Bipin Ahire,** DCP, Surat City
– **Shri Anyesh Roy,** DCP, Delhi
– **Dr. E. Madhu,** Principal Scientist, CSIR, New Delhi

"Police Apps and Websites: Issues of Standardisation"

POLICE APPS AND WEBSITES: ISSUES OF STANDARDISATION

In the digital world of ubiquitous online presence of everyone, all the Indian police organisations too have gone online. Police Apps and websites have become a popular platform for Indian Police organisations to disseminate information and connect with the citizens through various online services.They are now an integral part of good governance, community policing and are also very helpful in making the police operations transparent and more accessible to public in various ways. However there are considerable variations in the Apps and websites of various police organisations in India in terms of contents, information and services being offered etc.

The group of officers, constituted by Bureau of Police Research and Development, has studied and deliberated on this issue and has prepared this report. As a part of this study a number of police Apps were studied and all the Indian Police websites were also visited.

Police Apps

Although several States have their police Apps still there are few States and Union Territories, which do not have any official police App. There are police Apps offering crime reporting, traffic updates, matching of stolen vehicles, telephone directory, information about traffic signs, traffic offences and penalties, information about traffic notices and payment, road safety, information about nearest location based on geo location, distress calls related to women safety, tenant, servant, employee verification, lost & found report, missing person report, etc.

Although there are large number of police Apps for citizens but there are very few mobile Apps related to the internal functioning of the police department

Various states have designed their own Apps based on their own requirements, however from the analysis of all the Apps, that have been developed across the states, it is clearly evident that there are different Apps which are either Government developed or government supported or private ones developed using the logo of the Government, There are also Apps developed at District/division levels and also at the initiative of individual officers levels thereby creating confusion in the minds of public as to which App is official or otherwise. The services offered by these Apps also differ a lot. To end this confusion amongst the public there is a great need of standardization of the Apps. There is also a need to have a uniform countrywide template for Police App, which would have common features to ensure uniformity in the services provided in the platform. Each state is free to customize the Apps as desired, however the App should have certain minimum functionalities and features. The app should be in English language with local language support as there is a Unicode platform available thereby reaching to the masses which are non-English speaking. An ideal standardised App should have the following features.

List of features that should be available in standardized Police App

(a) Dial 100 in cases of emergency. informing control room about accidents and other crimes.

(b) SOS alerts to be shared with the control room with or without audio & video, along with the GIS coordinates when the aggrieved person is unable to make a call.

(c) Locate the nearest Police Station around Citizen with a map showing distance with directions and jurisdictional boundary of the Police Station.

(d) Lost and found article report; citizen can report a found/abandoned article along with/without the photograph and can also report a lost article, wherein a digitally signed certificate will be issued to the citizen which can be used for various legal purposes.

(e) Lodging complaint against traffic violators; the citizen can lodge complaint against the traffic violators with a photograph with the date, time and place of violation.

(f) Tenant/servant verification; the citizen can get his tenant/servant verification done online.

(g) Search stolen vehicles; every citizen should be able to search if any vehicle is stolen based on vehicle number, engine number or chassis number. If this feature is integrated with all India database of stolen vehicles, it would be an added advantage.

(h) Register online complaints; this facility is provided to the citizen to register online complaints.

(i) Tips for traveling; this facility will brief the public/end users about the state, weather and other aspects about the states, particularly those where a lot of tourists go.

(j) Do's & Don'ts; it will caution the public in general about the desirable and the avoidable things preventing the users from engaging in unwanted acts/ untoward incident.

(k) Track traffic challan and make payments; this will ensure the status of the challan issued and fines to be received/ recovered.

(l) Telephone directory of police officials; all numbers of all the Police Officers.

(m) Various NOC's can be obtained online, such as Police clearance certificate, rally, sound permission, etc.

(n) View FIRs and status of the FIR (only for the complainant).

It is suggested that:-

i) Updated News for press releases should be flashed across all the platforms.

ii) Receiving and giving online RTI service can be a feature to be included.

iii) Live chat based on the lines of Police Control Room. i.e. Queries about Police procedures.

iv) Provision to solicit new ideas, opinions, suggestions and feedback.

v) Creating awareness about citizens' rights.

vi) Emphasising proper infrastructure and a fail-safe mechanism in case of any contingency should be of utmost importance. e.g. Cyber-attacks, malware attacks, bug issues, ransomware, etc.

vii) Timely software updates, audit reports to be carried out with timely updates of telephone numbers, etc.

viii) Each App should be monitored for user feedback and proper response should be given.

ix) Each App should be audited for cyber security before releasing it to the public. There must be adequate safety mechanisms for the user data.

x) There is a strong need for developing various mobile Apps for internal work flow of Police organisations and making CCTNS also accessible on smart phones so that Police officers are able to perform various functions from field itself.

In the digital world, where more and more citizens are now having access to smart phones and cheap data connectivity it should be our endeavour to deliver as many police services and interaction with citizen's using mobile Apps, as is possible.

Analysis of the apps of various states on IOS and Android platforms has been carried out and the details are enclosed at Annexure – A.

Police Websites

It has been noticed that all the State and union territories police organisations have their websites hosted on *nic.in* or *gov.in* on NIC servers. These police websites offer a platform for a number of services such as lost/found article report, lodging complaint against traffic violators, tenant/servant verification, police clearance certificate, search stolen vehicles, register online complaints, tips for traveling, do's and don'ts, track traffic challan and make payments, telephone directory of all police officials, informing control room about accidents and other crimes, various NOCs, view FIRs and a bundle of photographs in the photo gallery.

Other than individual interactions between the police officer and the citizen, the website and related web-presence of the police department is one key element that defines this communication.

Having a social media/website presence can benefit the police department and community by building a trustworthy relationship and a sense of belongingness by engaging with each other, leveraging police department's reputation with the community, providing a forum for people to ask questions and for the department to share tips which would otherwise not be shared, spread knowledge quickly and with minimal effort that could protect your community, help catch suspects, find missing persons, etc. The effectiveness of the website for any organisation depends on the layout and the contents available. The content and layout define the core essence of what is being sought to be communicated to the public in general.

From the police perspective, the core objective is to gain trust worthy communication link with all the citizens and the police website is one important facet of an overall web/virtual interaction presence.

A static website is only a one way communication. The citizen services should be user friendly so that the citizen can register complaints online at the click of a button, upload informative pictures thereby making the website interactive and user friendly. Special emphasis should be laid on having a senior citizens helpline, children's corner/ helpline wherein the children can unhesitatingly ask their queries pertaining to the police department, road signages and traffic related issues. The website should be bilingual, mobile friendly, able to reach to the masses.

The website should have a linkage to the data base of the CCTNS project so that the complainants/applicants are updated about the status of their complaints/applications by means of automatically generated SMS or Email. If possible live chat should also be introduced so that the shy public are able to express their views, lodge complaints, inform about crimes happening and other aspects that need attention from the police. A monitoring mechanism also needs to be in place for the feedback received with an interactive help desk for content management, replying to queries. In addition security audit of the website should also be conducted annually or whenever structural changes are made so that the website is hack proof. Every website should have a linkage of the police Apps offered by the department. Linkages may be by means of QR codes wherein the user can scan the QR code which will redirect the user to download the Police App. Overall the website should be an end-user friendly platform.

Assessing the quality of the department by its presence on social media is difficult, however it would surely act as an effective mechanism for police-public communication, which can be used to show and spread the positive intent of the police departments. It is seen that the design, contents, colour scheme, navigational ability and user friendliness of various police websites differ a lot. There is a need for standardization of basic templates/ design of police websites also. The bare minimum ingredients what a website should have are listed below.

List of features that should be available in Police website

(a) Locating the nearest Police Station around Citizen with a map showing directions and also knowing the geographical surroundings.

(b) Lost/found article report; citizen can report a found/abandoned article along with/without the photograph and also report a lost article. So also a digitally signed certificate should be issued to the citizen which can be used as a legal document.

(c) Lodging complaint against traffic violators; the citizen can lodge complaint against the traffic violators with a photograph/video showing the date, time and place of violation.

(d) Tenant/servant verification; the citizen can get his tenant/servant verification done online in the form of digitally signed certificate.

(e) Search stolen vehicles; every citizen should be able to search if any vehicle is stolen based on vehicle number, engine number or chassis number. If this feature is integrated with all India database of stolen vehicles, it would be an added advantage.

(f) Register online complaints; This facility is provided to the citizens to register online complaints.

(g) Tips for traveling; This facility will brief the public/end users about the state, weather and other aspects about the states. Tourism destination states can offer citizens various tips during their travel.

(h) Do's & Don'ts; It will caution the public in general about the desirable and the avoidable things preventing the users from engaging in unwanted acts / untoward incident.

(i) Track traffic challans and make payments; This will ensure the status of the challan issued and fines to be received/ recovered.

(j) Telephone directory of police officials; All numbers of all the Police Officers posted in the department, however less stress should be laid on organisational description and more on visitor needs. A citizen typically is visiting the police website to seek services and that should be a priority. Organisational description as well as information of officers who may be dealing with specific jurisdictions or cases continues to be important but its 'footprint' on the main-page could be reduced. Light content-footprint to enable friendly experience for low-screen-size and low-bandwidth devices, thereby enabling the content loading at the fastest speed.

(k) Various NOCs can be obtained online, such as Police Clearance Certificate, Rally, Sound permission, etc, in the form of digitally signed pdf document.

(l) View FIRs and status of the FIR (only for the complainant).

(m) Photo Gallery of the good work done by the police.

(n) Children's corner; having road signages, road safety tips, wherein the children are free to login and complain.

(o) Senior citizens help line; Through this the senior citizens can contact the control room at ease.

(p) Advisory/Creating awareness, one of the easiest ways for law enforcement agencies to prevent crimes of opportunity is by educating the public about the value of privacy in social networking sites. Posting about their vacation, evening plans or new purchases become a potential target for a break-in or theft.

(q) Information about police martyrs from the state.

There have been momentous shifts underway towards standardisation of the police websites and effective utilization of the various police software applications throughout the country. Based on specific needs and the requirements, most of the states have devised and brought into use applications with intention to Fast Track the policing procedures that include replying to the day to day queries to providing quick emergency assistance to the citizens in stress. This new approach is embedded within the rule of law and security.

Process of standardizing the police websites along with effective applications is increasingly recognised as being central focus to the successful conduct of police procedures and protocols depending on the way applications are designed.

It causes a greater and deeper scope of providing quick solution to the issues that range from answering day to day queries to providing timely assistance to any citizen in distress. Standardising the sites and introducing new applications dedicated to serve the citizens eases out most of the challenges currently faced by the police department. Implementation of one uniform system throughout the country would lead to a better understanding sharing between the states, bringing about a virtual sense of acceptance to positively modernise our already lacking decade old policing structure which is nothing but obsolete.

Standardising the police websites would help public in navigating the websites and they would know what is expected from a police website.

Objective of using software applications is very realistic approach to improve the functioning of the police force and funds have been allocated for this in the modernization plan accordingly.

ISSUES

As of now no states or union territories is operating their websites on domains such as .com, .in, .co.in, .org, .net, etc. Analysis of the websites of various states has been carried out and the details are enclosed at Annexure – B.

Many of these domain names are used by private entities or are available. A policy decision should be taken to either own all these available domains or leave them. Only a few websites use SSL certificates and most of the websites are on http protocol. Some websites have not been updated frequently. Each state should also have a SOP to deal with a situation in case a website is hacked. Strong back-end support (24x7) for quick interaction, interactive response with automatic replies generated to the public which should also include in built time bound escalation process with immediate manual follow-ups with the citizens for redressal of their complaint.

– **Shri Muktesh Chander,** DG, Goa
– **Shri S.B.K. Singh,** DGP, Arunachal Pradesh
– **Shri Ashutosh Pandey,** ADGP, Uttar Pradesh
– **Shri Ravi Gupta,** ADGP, Telangana
– **Shri G.P. Singh,** IGP, Chhattisgarh
– **Shri Kumar Vishwajeet,** IGP, Andhra Pradesh
– **Ms. Satwant Atwal Trivedi,** IG, BSF, Delhi

"Crime and Criminal Tracking Network & Systems (CCTNS)"

Concept Note

Challenges & Road Map of CCTNS

National Crime Records Bureau
Ministry of Home Affairs
Government of India

May, 2018

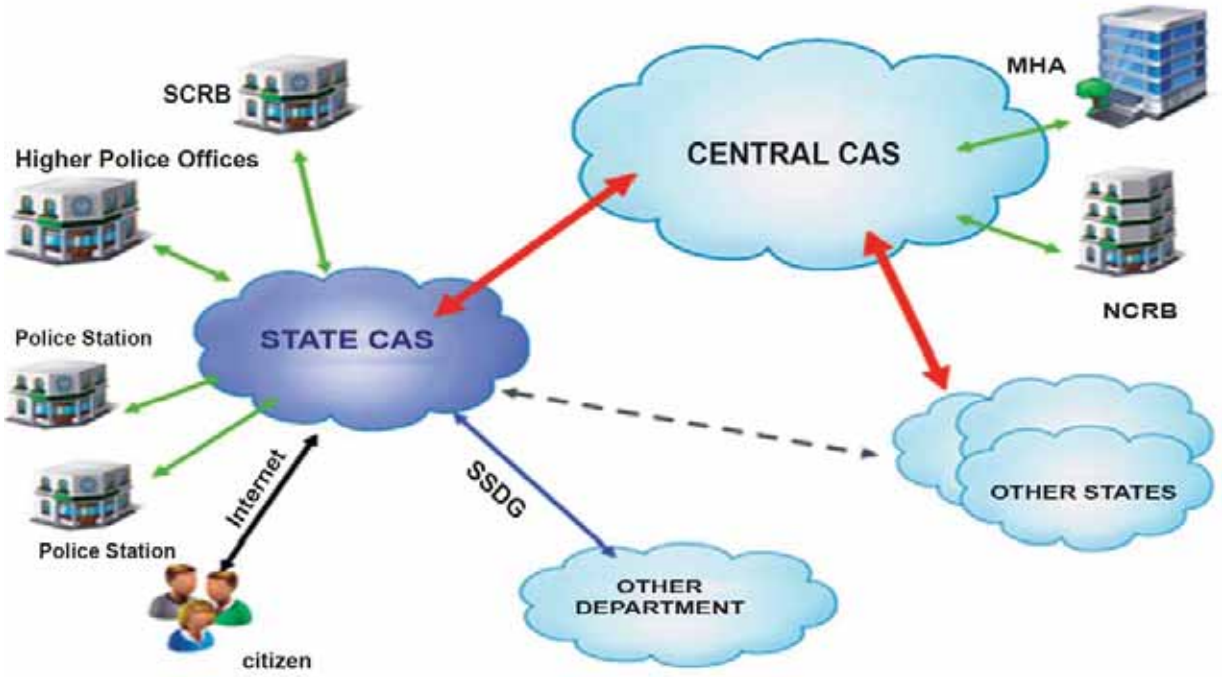
The Think Tank for Indian Police
'Promoting Good Practices and Standards'

"Crime and Criminal Tracking Network & Systems (CCTNS)"

I. INTRODUCTION

CCTNS is a Mission Mode Project under the National e-Governance Plan (NeGP) of Govt. of India. CCTNS aims at creating a comprehensive and integrated system for enhancing the efficiency and effectiveness of policing through creation of a nationwide networking infrastructure for evolution of IT-enabled-state-of-the-art tracking system around 'Investigation of crime and detection of criminals'. An allocation of Rs. 2000 crores has been made for CCTNS Project. Cabinet Committee on Economic Affairs (CCEA) has approved the project on 19.06.2009.

The CCTNS connects approximately 15500 police stations and 6000 higher offices across the country. Data entered at Police Station using Integrated Investigation Forms (IIFs) of Core Application Software (CAS) is stored at State Data Centre (SDC) and is replicated regularly to National Data Centre (NDC).



II. STATUS OF CCTNS (AS ON 31ST MARCH, 2018)

No. of States/UTs	Implementation %
6	90-99%
10	80-89%
5	70-79%
5	60-69%

No. of States/UTs	Implementation %
5	50-59%
3	40-49%
1	30-39%
1	10-19%

S.L.	Main Pragati Parameters	As on 31/03/2018
1	No. of Police Stations (PS) in States/UTs	15609
2	No. of PSs having Network Connectivity	14408 **(92%)**
3	No. of PSs where CCTNS Software is deployed	14630 **(94%)**
4	Legacy Data Migration completed (in Lakhs)	398.24/439.62 **(91%)**
5	Citizen Portal launched	35/36 States/UTs
6	States/UTs Data Replication started at NDC	35/36 States/UTs
7	State Disaster Recovery Centre established	31/36 States/UTs
8	Entry of IIFs in CAS (average of last six month) IIF-1 - 87% IIF-2 - 80% IIF-3 - 74% IIF-4 - 77% IIF-5 - 73%	78%
9	No. of IIF-8 to IIF-11 & Other Forms in CAS	40%
10	Role based Training of CCTNS completed (in Lakhs)	5.25/6.27 **(84%)**
11	CCTNS used for generation of DSR	24/36 States/UTs
12	CCTNS Generated IIF-1/FIR being submitted to Courts	20/36 States/UTs

III. ACHIEVEMENTS

(a) Usage of CCTNS

i) Detection of Cases & Gangs/ Habitual Offenders

ii) Matching of Un-identified Dead Bodies and Missing Persons

iii) Tracing of Stolen Vehicles

iv) Criminal record check for Police verification/ Antecedent verification/ Passport verification etc. done using CCTNS database without delay.

v) SMS Alerts and Generation of Reports & Registers including Daily Situation Report/ MCR

vi) Recovery of lost data

(b) Uniformity in data (IIF 1-7 and other forms) across police units in the country

(c) Online GD Entry in PSs and direct filling of FIRs in CAS has made false implication of persons difficult and GD has become much stronger and acceptable evidence in the Courts as it is being written continuously

(d) View FIR functionality available on Police citizen portals as per Supreme Court guidelines

(e) Details of arrested & wanted persons are available on Police citizen portal, as per Supreme Court guidelines

(f) Dashboard for senior officers displays various up to date information about his/ her jurisdictions

(g) SMS alerts generated to inform complainants about registration of FIRs, arrest of accused, charge sheet of cases etc.

(h) Search & Query functionality on National and State level databases

(i) Criminal record check of applicants of Global Entry Program (GEP) of USA done by NCRB

(j) Good practices adopted by States/UTs

Development of Mobile Application for ease of access of various police related services to the citizens

i) Complaint Registration (Telanagana, Jharkhand, HP, Pudducherry, J&K, Tamilnadu, MP, Maharashtra, J&K)

ii) Online lodging of FIRs for Motor Vehicle Theft and Property Theft (Delhi, Chhattisgarh, UP)

iii) Himmat, E-Saathi, E-Beatbook, Traffic Police, Senior Citizen – Delhi

iv) Track missing child/Person (HP, Andhra Pradesh, Chhattisgarh, Delhi, Gujarat, MP)

v) Un-Identified Dead Body Matching (Chhattisgarh, Andhra Pradesh, Maharashtra, MP)

vi) Passport Verification/Domestic Help Verification (Gujarat, Jharkhand)

vii) Citizen Tip (Maharashtra, MP)

viii) Shakti, online traffic E-Challan & Crime Control – Jharkhand

ix) Citizen Help App and E-FIR – Uttar Pradesh

x) SMS based Vehicle Monitoring System – Nagaland

(k) Various additional modules have been developed by States/UTs by customizing CAS as per their specific requirements e.g.

i) Tamil Nadu has developed a module allowing complainant/victims and Insurance Companies to request for downloading relevant documents, including FIR copy, PM copy, Motor Vehicle Report on minimal payments basis.

ii) Enterprise Search: Analytical search engine for Suspect by Name, Crime Number, Mobile Number etc. (AP/ Telangana)

iii) Criminal Intelligence System (CIS): Search & Match Missing persons & UIDB, Criminals & MO etc. (AP/ Telangana)

iv) Under Ground/Extremist Organisation Module (Manipur, Odisha)

v) HRMS, FSL Module (Odisha, Haryana)

vi) Traffic Management System (HP, Tripura, Odisha)

vii) Integration with Court, Knowledge Repository/ Digital Library SMS Gateway (Karnataka)

viii) Passport Integration (Assam)

ix) Dynamic Queries and BI Tools (Maharashtra, MP)

(l) NCRB has developed and shared various Citizen (Bouquet of 9 citizen services viz. complaint registration & status check, view FIR, emergency SOS help, locate PS, vahansamanvay etc.) and Police centric (Get Latitude & Longitude of Scene of Crime etc.) Mobile App templates to States/UTs and States have customized the same for ease of accessing various police related services

(m) National Digital Police Portal was launched on 21/08/2017, and it allows search for a criminal / suspect on a national data base apart from providing various services to citizens like filing of complaints online and seeking antecedent verification of tenants, domestic helps, drivers etc. (https://digitalpolice.gov.in/)

(n) Some of the many success stories of CCTNS are enclosed as Annexure "A"

IV. CHALLENGES IN SMOOTH IMPLEMENTION OF CCTNS

(a) Poor and Unreliable Connectivity

i) Last mile connectivity – neither reliable nor sufficient

ii) Available band width in most police stations is 512 KBPS

iii) 1101 sites are presently not connected out of which 377 are TNF sites (as per BSNL). The bandwidth provided by VSAT is insufficient for CAS in Police Stations

iv) Frequent breakdown of connectivity (approx. 50%)

v) Delay in synching of data to SDC

vi) Police is not part of e-Governance projects like SWAN, NKN etc. in many States

vii) Poor service provided by BSNL. BSNL was the sole service provider

(b) Unsatisfactory Adoption at Field Level

- The current application needs a revamp to improve upon the user experience and adherence to all field conditions and scenarios. Some of the common requirements are -

i) Need enhancements to provide better user interface

ii) Ease of filling IIFs

iii) Accessibility using mobile terminals

iv) Easy search and Dynamic Query Builder & Report Generators

v) Quick response from the application

vi) Mapping of field specific hierarchy in the software

vii) Linking of an accused involved in different cases

viii) Master Data Management Flexibility

ix) Enhancement of citizen services

- Lack of Dedicated Manpower at Police Stations/District/State level for attending CCTNS related activities

Non-availability of dedicated manpower at Police Station/District/State level is an issue. Constables who have been deputed for this work are also put on other regular duties in the police stations which have resulted in delay in entry of forms. Moreover, after the exit of SPMU/SI, there is a requirement of technical staff at State/District level to provide technical support like Network Management, Data Centre Management, Hardware Management and troubleshooting at Police Stations.

- Poor Data Quality

Improper and erroneous entry of information at police stations leads to poor quality of data and sometimes hinders in generation of appropriate reports and search queries.

(c) Absence of Crime Data Analytics and Artificial Intelligence tools

CCTNS database is growing very rapidly and as of now, the database has more than 13.5 crores of records approximately. Presently, there are no Crime Data Analytics

or Artificial Intelligence tools available in CCTNS for providing detailed analysis of this huge data of crime and criminal that can be used for predictive policing. This hinders in prevention of crime and delays in deployment of forces as and when required.

(d) Obsolete Hardware/ Software

CCTNS Hardware deployed in Police Stations, Higher Offices and NDC/SDC/ DRC areas per the configuration proposed in the year 2009. Response time of these outdated infrastructures is very high and hence the field level usage of the CCTNS is very poor. Most of these outdated hardware are not compatible with the latest software required to be deployed in CCTNS application. Hence, the hardware are presently obsolete and required to be refreshed at the earliest.

(e) Sustenance of Project beyond 31st March 2018

No funds are allotted for the Operations & Maintenance (O & M) and Network connectivity post 31st March 2018, after the project has officially ended by MHA.

States/UTs have also not made any budgetary provision for the sustenance of project after 31st March 2018. In the absence of funds for O&M and network connectivity, the project may be adversely affected.

(f) All FIR Registering Agencies not covered under CCTNS

Other FIR registering agencies like Excise, Forest, CBI, NCB, ED, NIA etc. are not covered under CCTNS and hence, the purpose of centralized database of crime records is yet to be achieved.

(g) Absence of Specialized Solutions

Specialized Solutions like National Automated Finger Print Identification System (NAFIS), Facial Recognition System, Crime Data Analytics, etc. are yet to be operationalized to achieve the maximum benefits of centralised crime & criminal database in respect to the ease of crime detection, prevention, predictive policing and strategic planning.

(h) Other Challenges

i) No unique identifier for person arrested and un-identified dead bodies

ii) Some States like West Bengal are not sharing complete data with the centre

V. EXPECTATIONS FROM STATES

(a) Complete gaps in the project on urgent basis

(b) Release of the funds from treasury to State Police and utilization of funds

(c) Provision for CCTNS project in the state budget

(d) Creation of IT cadre to handle project and initiate Capacity Building exercises including Change Management programs.

(e) Enhance the usage of CCTNS application

(f) Sending the documents generated from CCTNS to courts

VI. FUTURE ROAD MAP OF CCTNS

(a) CCTNS 2.0 (Phase – II)

A new and updated technical system for better tracking of crime and criminals.

i) Robust Connectivity to all Police Stations and Higher Offices: In this context, providing Optical Fibre connectivity is most desired which will take the project in next orbit. Police is kept away from e-Governance projects like SWAN, NKN etc. Provision for availing Bharat Net (NoFN)/ SWAN may be considered for providing Last Mile connectivity.

Proposed Solution:

Long Term Plan (Proposal of BSNL) – Dedicated

- MPLS Connectivity for Police Stations and Higher Offices (2 Mbps/4Mbps) on Optical Fibre cost for 10 Years. Estimated cost Rs. 484 Crore Per Year (Negotiable)
- Last Mile Fibre Connectivity to all Police Stations and Higher Offices (One Time). Based on BSNL Proposal, Rs. 3 Lakhs per kilometre, total estimated cost Rs. 649.41 Cr.

ii) Specialized Solutions are identified with estimated cost for procurement in Table 1.

RFP for NAFIS is under preparation. In principle approval from MHA received but funds have to be provisioned.

iii) Technology Refresh (Software and Hardware) for all police stations and higher offices & National Data Centre, State Data Centres and Disaster Recovery Centres

Value Addition:

i) Better Application (software) on Better Hardware for Quick Response to Citizen and Police

Table 1

S.NO	Solution	Estimated Cost.
1 (a)	NAFIS (National Automated Finger Print Identification System)	80 Cr.
1 (b)	Finger Print Enrolment Devices (at Police Station)	258 Cr.
2	Automated Facial Recognition System (at SDC)	25 Cr.
3	Crime Data Analytics Software with GIS and Hardware (at NDC), Development of Mobile Apps, Customization of CAS, New Modules	72 Cr.

ii) Addition of Modules and mobile apps for extended working

Proposal:

Technical Refresh with approx cost of **1155 Cr. (3 years in phases)**

iv) On the field usage improvement through Mobile Data Terminal (MDT). To extend the use of MDT at field level for filling IIF 1 to 4 at Scene of Crime and also to utilize the Search facility for verifying questioned Person & Property.

v) Extended CAS through value added features and modules on desktop & mobile for user friendly adoptability at field level by providing better user interface, ease of filling IIFs, easy search & queries and quick response from the application.

vi) Increase in Citizen Services beyond the 9 which were envisaged earlier, all interactions of the Citizens with the Police initially should be online. It is envisaged that citizen interaction like passport verification status, traffic challan deposit, property release request, online appointment is done over web. A plan will also be drawn to combine extra services offered by the States|UTs and rolled them in the core CAS.

vii) Integration with

i) Other IT applications like NERS (National Emergency Response System), CCTVs, Beat System

ii) Other databases like Fingerprints, Passport, and Transport etc.

(b) Development of National Crime Portal (24x7) for dissemination of alerts / information on crime and inter-state criminals to States/UTs

- **Crime Clock on NCRB Website: This** representation of crime data shows the relative frequency of how often violent and property crime offenses occurred in a year. The Crime Clock represents the annual ratio of crime to fixed time intervals.

  i) Crime Counter
  ii) Arrested and Charge sheet Counter
  iii) Conviction and Acquittal Counter

- **National Crime Portal** for issuing alerts against the following threats and building awareness to the citizens

  i) List of Ponzi (Fraud Financial Scheme)
  ii) Cyber Crimes related to Banks and ATMs
  iii) Nigerian Lottery Scams
  iv) Fake Indian Currency Notes
  v) Advisories and Cautions
  vi) Crypto-currency frauds like Bit Coin
  vii) Drugs and Narcotics Exchange Places
  viii) Crime during travel
  ix) Vehicle Stealing Places
  x) List of Warrants/Lookout Notices

Its scope can be further enhanced based on future needs, crime patterns etc.

(c) Crime Data Analytics for predictive Policing, Strategic Planning and Advisories to States

- NCRB has signed a MOU with ADRIN for developing following models of crime data analysis on CCTNS

  i) Crime Mapping module
  ii) Spatial Analytics module
  iii) NEWS module
  iv) Crime/Criminal Analytics module
  v) Criminal Network Analysis module
  vi) Predictive Analytics module

- Developing Crime Multi Agency Centre (C-MAC)

  i) Sharing intelligence on Crime and Criminal among various State and Central police units on the pattern MAC of IB.

(d) Interoperable Criminal Justice System (ICJS)

The scope of the CCTNS project has been further enhanced to integrate the Police data with other pillars of the criminal justice system namely- Courts, Prisons, Prosecution, Forensics and Finger Prints and accordingly a new system- "Interoperable Criminal Justice System (ICJS)" have been developed.

NCRB may be mandated as co-ordinating and monitoring agency for ICJS.

– **Dr. Ish Kumar**, Director, NCRB, Delhi
– **Shri V.K. Bhawra**, DGP, Punjab
– **Shri Anurag Gupta,** ADGP, Jharkhand
– **Shri Sudhanshu Sarangi**, ADG, SCRB, Odisha
– **Shri Ashutosh Pandey**, ADGP, Uttar Pradesh
– **Shri A.K. Jha**, Spl. DGP, Assam

Annexure "A"

SUCCESS STORIES OF CCTNS

SL	Status	Success Stories	
1	Maharashtra	1.	Denial of bail was given in 37 cases in Chandrapur using search and query to identify other crimes committed historically by accused in 37 cases.
		2.	2098 e-complaints and 4138 Service request disposed till date
		3.	Number of hits on citizen portal is 1225124 and Number of SMS sent to citizen for various citizen services till date is 37,71,966
		4.	Preventive Action taken against Habitual Offenders by searching Criminal Record in CCTNS database. Chan Chandrapur (15th Sept. '15 till date) – 4,805 Amravati Rural (1st May '17 till date)– 1,220
2	Telangana	1.	Previously DCRBs submitted manual reports to SCRB. Now SCRB Reports is being generated through CCTNS database and DCRBs are reducing the Staff.
		2.	465 MIS reports are being generated out of the CCTNS in the state of Telangana to facilitate to review/take strategic decisions by senior officers.
		3.	With the help of 100% data digitization, senior officers are able to review the crime online without paper i.e., paperless office
		4.	Character verification request is being carried out seamlessly with CCTNS database, thereby increasing the credibility of the department.
		5.	CCTNS enabled the department to identify 74 persons having criminal background nature during the recruitment process in which 10,500 participants aspired to join Police services.
		6.	Citizens can raise online petitions and system instantly sends an SMS confirmation when a concerned Police station receives the request, thereby increasing the credibility of the department.
		7.	100% online FIRs, which makes accuracy of FIRs and transparency

SL	Status	Success Stories	
3	Gujarat	1.	In Kheda district, Nadiad police station offences under (1) FIR No. I- 26/18 IPC 392,114 (2) FIR No. I-36/18 IPC 392,114 (3) FIR No. I-37/18 IPC 392,114 was registered. While investigating offence related to chain snatching, investigation officer used e-gujcop data to get the vehicle owner's information from incomplete vehicle number. During the investigation it was found that the accused was involved in more than twenty five criminal offences related to chain snatching. Thus. Serious crime was detected using e-gujcop data.
		2.	In Gandhidham district, police arrested a person involved in motor cycle theft cases. Police recovered three motor cycles from him. Using Vehicle search application of e-gujcop database, the vehicle owners were traced and police detected three theft cases which were registered in three different police stations (1) Gandhidham B-division FIR No. I-192/18 IPC 379 (2) Adipur Police station FIR No. I-2/18 IPC 379 (3) Gandhidham A-division FIR No. I-133/17 IPC 379 & FIR No. I-157/17 IPC 379 of Gandhidham district.
		3.	Using eGujCop Database, antecedents of 34,000 candidates were searched across all the Police Stations of the State, out of which antecedents of 2000 candidates were found to be suspicious. Deeper investigation revealed criminal background of approx. 500 candidates. The antecedent search for the 34,000 candidates was completed in about 12 hours 16 minutes.
4	Delhi	Identification and apprehension of 76 Proclaimed Offenders in the year 2017, linking with the FIRs and finally delivering the justice to the sufferers.	
5	Madhya Pradesh	1.	In Bhopal, a truck and its cleaner were forcibly hijacked and matched with an unidentified dead-body was found in the district Khargone which was 400 K.M. away from Bhopal.
		1.	Recovery of data: State was able to cope up with the damage occurred during the Farmers' agitation, one of such Police Station of district Dewas called Bagli was burnt, but as the data was digitized hence it could be recovered from CCTNS again and restored once again when the PS was re-established.

SL	Status	Success Stories	
6	Andhra Pradesh	1.	DGP conducted Crime review meetings with Unit Officers on CCTNS Data
		2.	Antecedent verification by SB people for Passport verification is done over CCTNS Data additionally.
		3.	Tracing of absconded person after 2 years with aadhar search. In Prakasam District, Cr. No. 17/2014 u/s 302, 380 r/w 34 IPC, Chirala II Town Police Station the accused Ch. Purnachandra Rao whereabouts were traced at Visakhapatnam
7	Assam	1.	Online police verification report submission for PRC services. Earlier the process is manual where DC office submits the request to SP office for submission of police verification report
8	Odisha	1.	State abolished manual registers from Police Stations from 1st January 2018.
		2.	Manual generation of FIRs have been done away. All FIRs are being drawn through CCTNS.
		3.	Daily Management reports are being generated for monitoring cases by senior officers of the state.
9	Tamil Nadu	1.	A utility application called "Crime Analytic and Data Visualization Application" has been developed and incorporated in the Officers Portal.
		2.	A special drive to match the missing persons with UIDB. Using this utility was conducted and 12-missing persons were matched with unidentified dead bodies in March -2018.
10	Jharkhand	Currently, CCTNS and Digital Police Portal are being used by all PS for investigation purpose and for getting criminal history.	

"Centralized Emergency Police Response System"

CENTRALIZED EMERGENCY POLICE RESPONSE SYSTEM

Security and Development are two facets of same coin. Without security, development is not possible. Providing security to citizens is a primary responsibility of the State. A responsive system is required to attend to citizens' issues relating to lives and properties of its citizens. In emergency people look towards State to reach to it for assistance. Policeman and Doctor are two persons whom people need in most of the emergencies. Police station is the only office of Govt. that is operational 24X7 without break or strike. However, reaching police station has been a challenge due to various factors. Hence an emergency contact Telephone number 1-0-0 was defined to contact local police. Typically, 'Police Control Rooms' at the district or city levels house the emergency service number 100. But the situation is far from ideal in most of 600 districts in the country. There can be situation when telephone lines of the control room may not be operational. Policemen may not attend the calls or may not 'respond' particularly in rural areas in night 'Assistance' to victims may not be prompt. One may be moving on rail or road and hence may not know the jurisdictional district or P.S. Many minor incidents escalate to major situations if are not attended well in time. Out of 600 odd Districts in this country most districts PCRs are inadequately equipped for any meaningful emergency response.

Classification of emergencies and role of police-

Emergencies across the world may be classified as following according to the role of service agencies-

Police response expected	**—**	**50%**
Medical Response	**—**	**45%**
Fire Fighters' Response	**—**	**1%**
Multi Agency like Disasters	**—**	**1%**
Others	**—**	**3%**

In many medical emergencies and in all the fire & disaster related emergencies, police response is also required either as a statutory requirement or for practical & operational reasons.

Status of ERS in India

Emergency response in India is fragmented and depends upon agency to agency, State to State, and department to department handling the task. While police related situations are handled by police, health matters are dealt by medical and health department in the States. Status of fire service varies from State to State. In some State it is with police, while in some other it is either a separate department or with department of urban administration. For various issues there are separate numbers to contact the concerned emergencies, Like, 100 for police, 108 for medical, 101 for fire, 102 for ambulance, 1090 for women helpline, 1098 for child helpline, 1076 for disaster related emergencies. For one type of emergency there may be different number in different States. Citizens have to face lot of inconvenience in finding and contacting appropriate agency for assistance.

So far as police is concerned, the 1-0-0 number is uniform across India, but service response

status varies from State to State and District to District and even police station to police station. In most of the 600 odd districts in India, situation is far from satisfactory. Situation may be like anything between Stage 2 to Stage 7 depicted as under-

Journey of Emergency Service in Policing

Stage 1 – Primitive:

In pre-Telephony Era citizens used to visit nearest police stations and as per the availability of resources response was decided by the police station officials

Stage 2 – Telephonic Era:

After the introduction of telephony services, police station started using telephone for receiving distress calls, but due to very low density of telecom networks pervious system continued to operate. Quality of response depended upon the resources of police station and work load on it.

Stage 3 – DPCR:

During 1970s in metro cities and at district level, police control rooms were established, and 100 number came into existence as common number for emergencies. In this stage, people started calling on 100 number, which was responded from DPCR or metro PCR. A manual data of complaints was maintained at DPCR and police stations were asked to respond. Some metros like Kolkata had few dedicated police response cars.

Stage 4 – DPCR with Response Vehicle & Staff:

In the next phase DPCR's were assigned some First response vehicles which used to respond in synergy with police stations. Mostly the system continued to remain rudimentary and dependent on police station officials.

Stage 5 – Dial 100 with basic Technology:

Between 2000 and 2005, computers and some limited software were provided at DPCR to capture the data in word or excel formats. Response mechanism improved slightly or remained almost same.

Stage 6 – City based Dial 100 with high-end Technology:

2005 onwards, some city-based Dial 100 Emergency Systems came into existence with EPBAX, CAD & GIS Maps. They used to respond with the support of police station resources. Delhi, Mumbai, Bhopal, Indore and some more cities took the lead in technology and response quality improvement. Dedicated vehicles directly taking instructions from PCR (City) were deployed.

Stage 7 – 2015, Statewide Centralized Emergency Response:

Madhya Pradesh became the first state in the country to roll out state – of –art Central Emergency Response System with state level Contact Center and dedicated 1000 First Response Vehicles. UP is next. From 2016 onwards, many states started studying this model and few of them adopted with various modifications.

Shortcomings of prevalent (Stage 2 to Stage 5) Police Emergency Response System: -

Unless a District or State is at Stage 6 or 7, there are following shortcomings in police

emergency response system in various permutations and combinations-

- **Unwilling district police staff postings at DPCR.**
- **Untrained Police staff for handling Emergency calls.**
- **Shortage of Police staff and Supervisor staff.**
- **Unavailability or shortage of dedicated Police Response vehicles.**
- **Absence of or ill - defined Standard Operating Procedures (SOP).**
- **No or negligible technological support.**
- **Personality and crisis to crisis-based monitoring &supervision of emergency response actions of DPCR.**
- **Lack of space in district police control rooms for emergency response set up.**
- **Unavailability of GIS maps of the area.**
- **Absence of measurable 'key performance indicators'.**
- **Manual record keeping, no voice loggers and no business intelligence / analytical ability for optimum utilisation of available resources.**
- **No feedback mechanism in place.**
- **Limited coverage (mostly cities or Distt HQ) in terms of geographical spread.**
- **Jurisdictional disputes among Police Stations adversely affecting response quality and time.**

Hence it is urgent that the police emergency response speed and quality is improved to help citizens in distress. Hence State wide centralized police emergency response is need of the time. It also need to grow into one stop unified single number for response in all kinds of or at least major situations unless requiring very specialized kind of response.

Why Centralized Response System

- Police Act mandates 'One Police' for whole state, so uniform service standards are imperative. In India we have State Police and not the City Police or Country Police or Borough Police. **It simply signifies that standards and practices of policing should be uniform at least throughout the State.**
- Adoption of technology is unavoidable and required for transformation of police into a service organization. Landline/Mobile/SMS/ Social Media/VOIP; GIS; GPS; Tracking; Voice logger; Multiple language handling; SOP; Feedback mechanism.
- Centralized model is suitable for the effective supervision and standardization of the processes across state.
- Cost effective as compared to District level Call Taking & District level response or District level call taking and police station level response mechanism.
- Optimum utilization of resources is possible only in Centralized State level Emergency Response.

Emergency Response System – Centralized v/s De-centralized

(a) Centralized State Level facility covers entire urban and rural areas of State while District level facility covers mostly urban areas.

(b) Centralized State Level facility does not have jurisdictional limitation while District level facility has issues between districts/ police stations.

(c) Uniform level of service across the State over entire jurisdiction is possible only in Centralized facility while in De-Centralized level of service is heavily dependent upon personality and preference of District S.P.

(d) In a modern Centralized facility, automatic detailed digital record keeping is done which is usable as evidence in courts and integrity of which is beyond doubt, while in de-centralized mostly traditional phone lines with manual working is there so its record would always be seen as suspect.

(e) In centralized facility, detailed Business intelligence-based analytics can be implemented at lesser cost and it can be developed as center for predictive policing while manual analysis and reporting is there in de-centralized. So decentralized response system will always be confined to reactive response.

(f) In centralized facility, sufficient resources – manpower, vehicle and arrangements for operations and maintenance can be provided while in de-centralized there is always lack of resources for operations and maintenance.

(g) Dedicated supervisory structure in centralized facility while in de-centralized supervision by local SP/ASP/DSP who lack time for meaningful interventions.

(h) In centralized facility, independent of police station, reports are directly available to DGP, IGP, DIG & District SP in addition to SHO too, while in de-centralized mostly staffed from police station mostly limited crisis management reporting to local officials.

Vision of Centralized Emergency Response System: -

To provide prompt integrated emergency response for public safety and security to all persons **Anytime, Anywhere across** the State.

Key Objectives

- Provide round-the clock availability of operational phone numbers.
- All urban, semi-urban and rural, and remote areas to be covered.
- Empathetic response to all calls.
- State-wide coverage of Police Emergency Response Services.
- Prompt Response for police emergency services.
- Same standard of service to be provided to all citizens in urban and rural areas.

Essential components of Emergency Response System:

Although most basic requirement is of a telephone, a wireless set, an operator to receive and disseminate incoming information and a couple of policemen to respond to the situation. But this is grossly inadequate in present circumstances. Following are the minimum essential components of any worthwhile emergency police response system:-

Components of any worthwhile emergency police response system-

1. Call Centre with CTI, voice call logger, Storage, CAD, GIS, EMS etc.
2. Dedicated & trained Call takers.
3. Dedicated Dispatchers.
4. Dedicated Response vehicles with GPS, MDT, PA System, Wireless, Mobile Phone connectivity, First Aid box, compact fire extinguisher, Accident Extraction kit etc.
5. Earmarked Responder staff waiting at public places to rush to respond.
6. Skillful Supervisors.
7. Well defined Standard Operating procedures.
8. Monitorable Key performance Indicators.
9. Feedback mechanism.

Way to Implement- Role of States and Central government

Since police and public order are State subjects in the 7th Schedule of the Constitution of India so States must take lead and improve their emergency response mechanism and standards. However central government has huge stake in the safety, security and satisfaction level of citizens. Big or petty, hundreds and thousands of discontents continuing across the nation contribute to general state of unhappiness of citizens with government service delivery status, so central government too is under obligation to provide necessary direct financial support to States.

Basic sovereign functions of internal security and public order maintenance cannot be outsourced but it is now widely accepted that government cannot do every other job with efficiency, effectively and with economies of scale. It is also widely accepted that every organization should concentrate on its core strength and perform its core functions, while frill can be outsourced to private sector with due regulations. In policing too, while core functions of prevention and detection of crime, maintenance of public order, etc. are to be performed by police

staff only. The core function like constructions of maintenance of buildings, housekeeping, maintenance and operation of general duty vehicles, technical jobs like setting up & maintenance of complete system, software development etc. can be outsourced to private sector. In view of above certain function in emergency response can also be outsourced.

Emergency response mechanism has four major components-

1. **Contact center set up, maintenance, call taking / information pick up operations.**

2. **Dispatch of incident for response, incident management, reporting, analyzing, response, supervision, training and skill upgradation content development.**

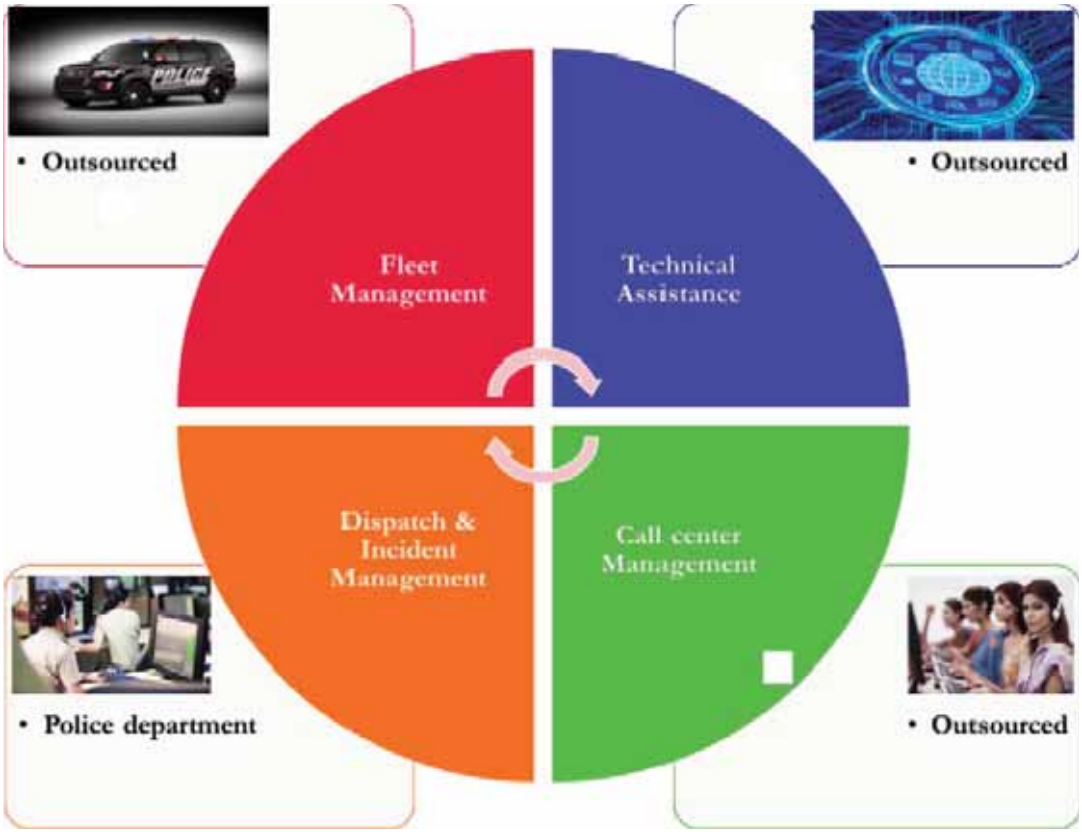
3. **Fleet procurement / providing, fleet operations, maintenance of vehicle and gadgets.**

4. **Technical assistance in whole operation, delivery of training and skill upgradation.**

Following is the graphical presentation of various operational models' choices-

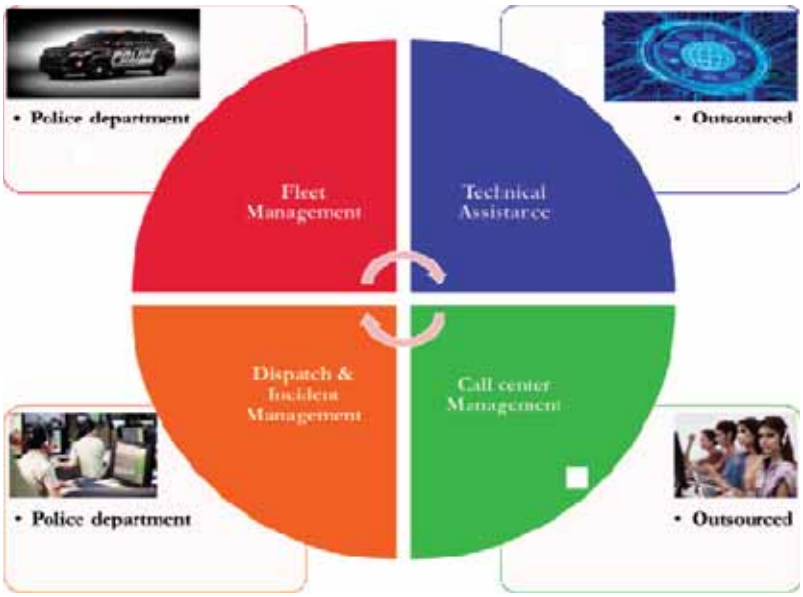
Operational Models:

1) Model - A



- Call Center Management, Fleet Management & Technology are managed by third party vendor.
- Dispatch & Incident Management are managed by Police department.

2) Model – B



- Call Center Management& Technology are managed by third party vendor.
- Fleet Management, Dispatch & Incident Management are managed by Police department**.**

3) Model – C

- Call Center Management, Fleet Management and Dispatch & Incident Management are managed by Police Department.

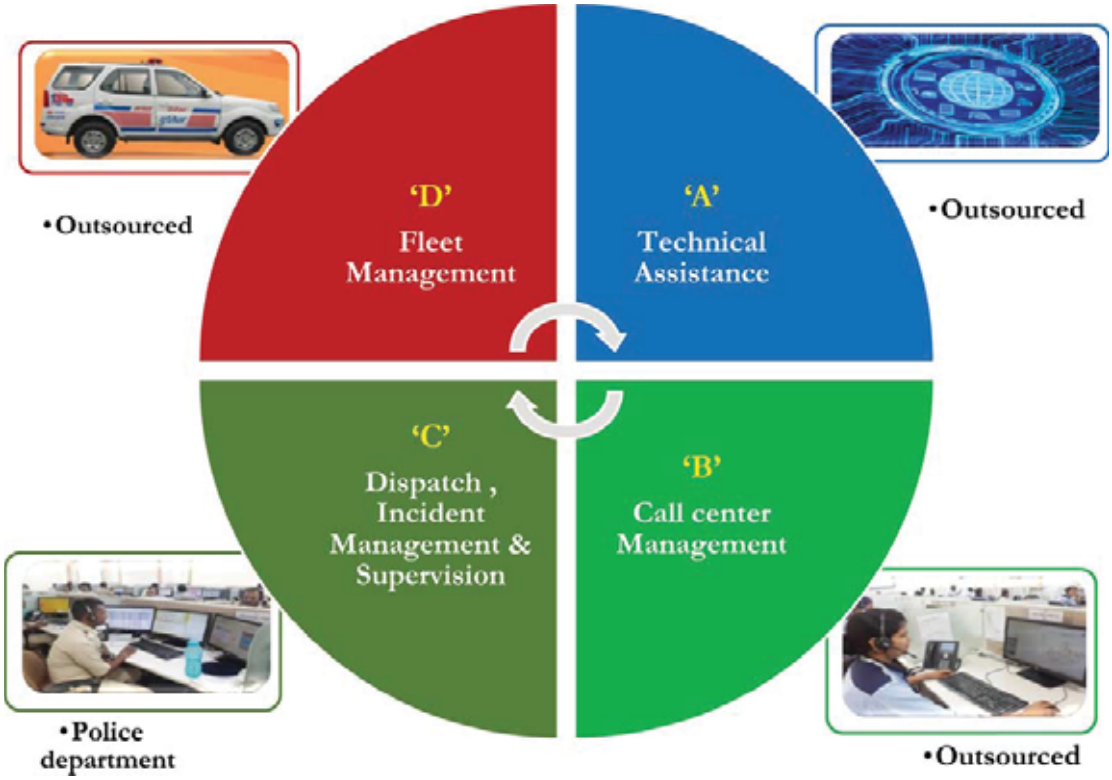
- Technology is managed by third party vendor.

States may choose different operations models depending upon their financial conditions and policies. MP State has chosen model A in which-

A-Technical Assistance, B-Call Centre Management and D- fleet management are outsourced.

C –Dispatch, Incident Management & Supervision is being done by Police officials.

D -Fleet Management may be in-house or outsourced, depending on the State's willingness.



In terms of level of centralization, States are having various models. While some States like MP and UP have preferred complete state-wide centralization, some others have gone for range or division level PCRs. Some have centralized dispatch while some are going for District level dispatch centers. Some states have provided state wide deployment of vehicles directly monitorable from contact center, others have preferred police station-based response vehicles.

Sr No.	State	Call Taking	Dispatching	First Response Vehicles	First Response Staff
1.	**Madhya Pradesh**	Centralized-Outsourced	Centralized-Police staff as Dispatcher	Private owned and operated Vehicles-Wet Lease Model	Deputed by PS on daily basis
2.	**Uttar Pradesh**	Centralized-Outsourced	Centralized-Police staff as Dispatcher	Govt. Owned & operated Vehicles	Deputed to UP 100 for fixed tenure
3.	**Delhi**	Centralized-Police Staff Operated	Centralized-Police staff as Dispatcher	Govt. Owned & operatred Vehicles	Separate staff under CPCR command
4.	Rajasthan	Semi-Centralized	Decentralized to District Level	Govt. Owned & operated Vehicles	
5.	Telangana	Centralized Call Taking	Centralized-Direct to Police Station	Govt. Owned & operated Vehicles at Police Station	PS staff
6.	Tamil Nadu	Centralized	Centralized-Police	DPCR-PS; Govt. Owned	PS Staff

Which Model is best?

- Every model has its own advantages.
- Every model has certain limitations.
- Local conditions and views of concerned political executives, secretarial officers and concerned police leaders primarily decide the matter.

DIAL 100 - Madhya Pradesh

Madhya Pradesh police has set up state level centralized Dial 100 control room cum command center in Bhopal for providing response in police related emergencies and other services to help people in distress. The control center is equipped with latest technological tools like Computer telephony Interface (CTI), CAD (Computer aided dispatch, GIS MAP for whole state, 100 TB Datacenter, Call Management System (Analytics), Voice Logger and GPS enabled 1000 first response vehicles, MDTs in each vehicle to attend to handle public distress calls for services. These First Response Vehicles are deployed across the State at public places. Around 6000 police personnel are deployed for the services equipped with wireless, Mobile Handset along with other modern gadgets and weaponry. The services are in operation since Nov. 1st, 2015.

As soon as a person makes a call on "100" number, it receives at the center by well trained staff who take necessary personal details, incident details and location details. Besides computer systems also validate at the same from CLI database, GIS MAP, Vehicle database, and other information available in public domain.

The trained dispatcher immediately dispatches nearest available one or more well equipped first response vehicle. Each vehicle is monitored and tracked through the GPS based AVLS equipment fitted in the vehicle.

Call Takers

Dispatchers

First Response Vehicle

Well defined SOPs have been implemented and are updated regularly. It has standardized the response across the State without case to case intervention from senior officers in the decision making of field staff. Key performance indicators have been defined which are monitored daily by ADG Telecommunications MP. 3 lakh PoIs have been defined in the satellite map procured form ISRO during GIS creation. Digital maps of each police station have been prepared to the precision of half a meter boundary of every police station. Every day 10% of calls are picked up randomly through computer systems and feedback is taken from the callers about their satisfaction about our services.

Each call and each activity is recorded on center's voice logger and web portal of activities. Once the first response staff reaches the Event destination, it takes necessary action as per "**standard operating procedure**" of the center.

After the action is taken, state PCR's dedicated feedback team contacts the caller/victim about the quality and satisfaction of the service provided by the police teams. Voice logger ensures post incident appraisal and third party audit of all call related information. There is also provision to facilitate the caller to be able to talk to senior officer of concerned District using three party.

It is integrated with other existing emergency number like Ambulance, Fire, Women help line and Child help line etc. This software based system is also used for daily patrolling.

DIAL 100 WORKFLOW

Dial 100 Services and Components

a. Technology Services

- Data Center
- Contact Center
- Computer- aided Dispatching (CAD)
- GIS
- MDT Devices and Application
- VHF/HF Devices and ROIP application
- Other applications, interfaces and portals like CCTNS, CCTV etc.

b. Telecom Services

- PRI lines at DC
- **Dial 100** number mapping for entire State
- Location Identification Services
- Connectivity for MDT and phones

c. Internet Services

- Internet Lease Lines
- MPLS connectivity for all sites
- IP based location identification services.
- Internet usage charges

d. SMS services

- SMS charges
- SMS Gateway
- SMS location identification services

e. Manpower

- Technology resources
- Communication Officer
- Training and Change Management
- FMS (Facility Management Service) Manpower
- Operation and Maintenance manpower support

Emergency Response Process Overview

Stakeholders

Call Takers: Private party (System Integrator) employee to take distress calls.

Dispatcher: Police officials are dispatching FRV after getting information about event from call takers.

Fleet: Private party Vehicles & Driver (System Integrator) for driving and maintaining the FRV.

Police officials in FRV: Police Staff is available in FRV for any movement to crime location.

SP's / CSP's and other District Police Control room officers: Police officials are equipped with Web Portal to monitor the movement of FRV and remain connected with FRV staff over wireless or phone.

Project Management Consultant: Team of professionals to monitor each and every activity of project on behalf of the Police department and provide necessary inputs for day to day supervision, monitoring and strategic decision making.

Senior Police official at PHQ

Social Media integration –

We are available and respond on Facebook, Twitter and Whatsapp. We also respond to information received over SMS.

Language support-

Besides Hindi standard MP dialect, MP dial 100 has dedicated desk for regional dialects of MP like, Bundelkhandi, Bagheli and Malwi. Dial 100 has capability to take calls in English and has arrangement with volunteers knowing many Indian languages and foreign languages to help national and international tourists.

Bagheli Desk

Malwi Desk

Integration with CCTNS, CCTV control rooms and other emergency helplines

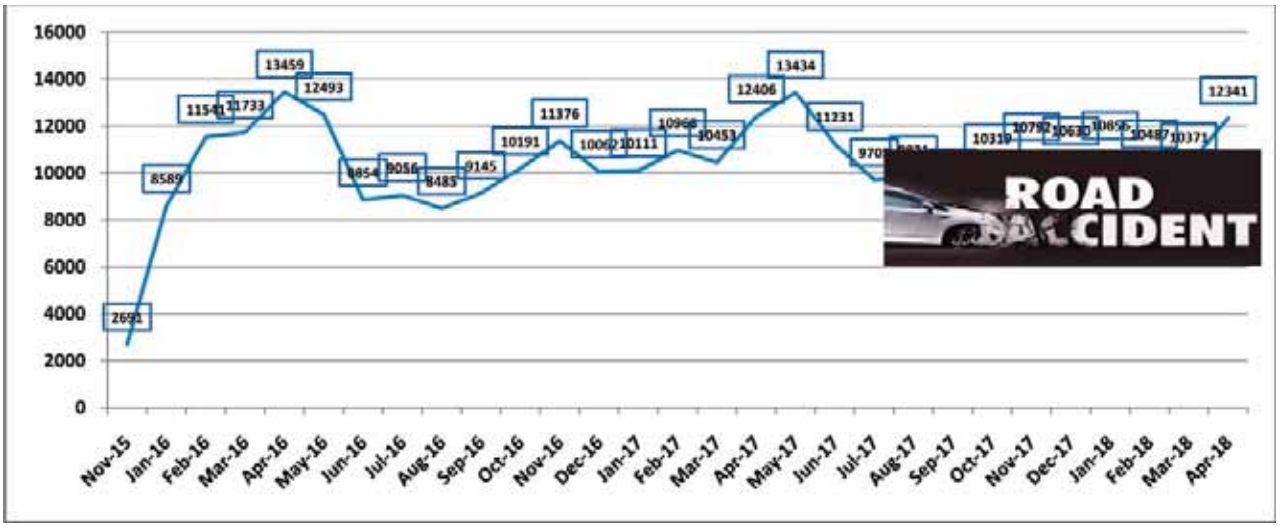
CCTV- Coordinates of CCTV Locations of different cities are plotted on GIS Map of Dial-100 project. As soon as any incident is reported in these locations, Dial 100 inform concerning CCTV Control room for monitoring and observation.

CCTNS- Complaints against police received on Dial 100 are also uploaded on CCTNS portal for further action. In General Diary, Dial 100 event numbers are proposed to be entered for those reports whose informations are received in Dial 100 first.

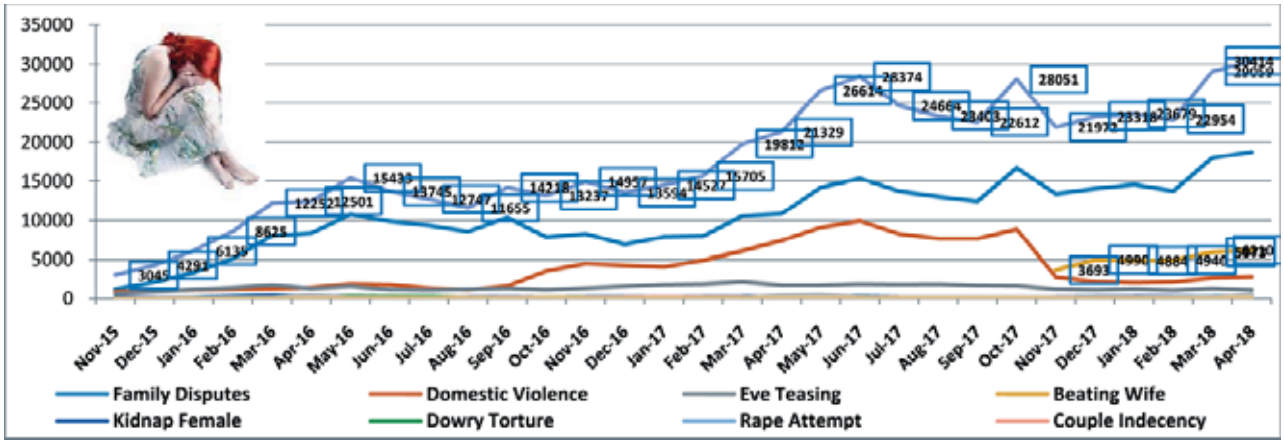
Performance of MP Dial 100 -Facts and figures

Total Calls received from Nov. 1st, 2015 till 30th April 2018:303.12 (in lakhs).	**46,60,853 person have been helped.**	**Responded to more than Lakhs women related events**	**Accident related Events -3.05 Lakhs**
Suicide Threats Handled-33,937	**Senior Citizens helped-17,666**	**Missing Children traced-5,491 abandoned Infants Rescued-392**	**Average Answering Level-approx. 98,00%**
Average AHT (Average handling time) for call is 1 Minute	**Average FRV Utilization across the state is 6.21**	**Satisfaction level of Dial 100 Service is 95% + as observed by third party**	

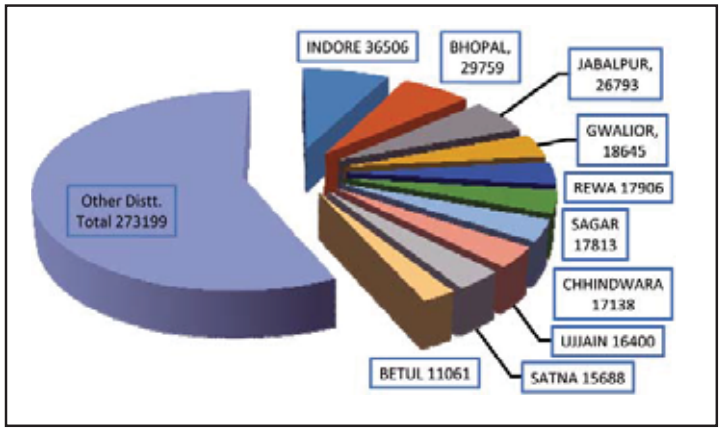
Accidents Events from 01 Nov 15 to 30 Apr 2018



Top 10 Informations Related Women - 01 Nov. 15 to 30th Apr. 20

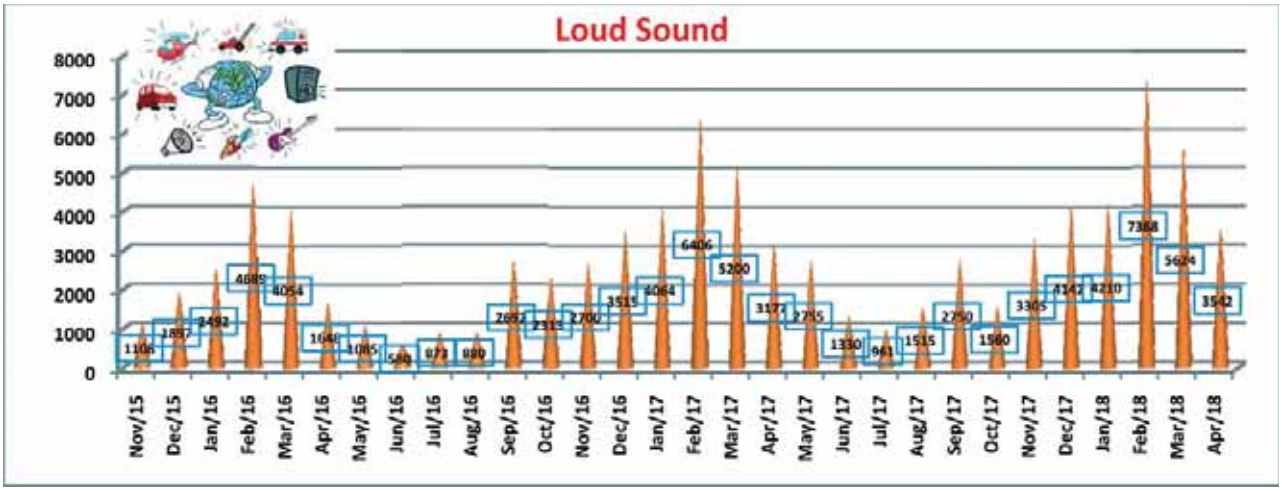


Women related information-Top Ten Districts

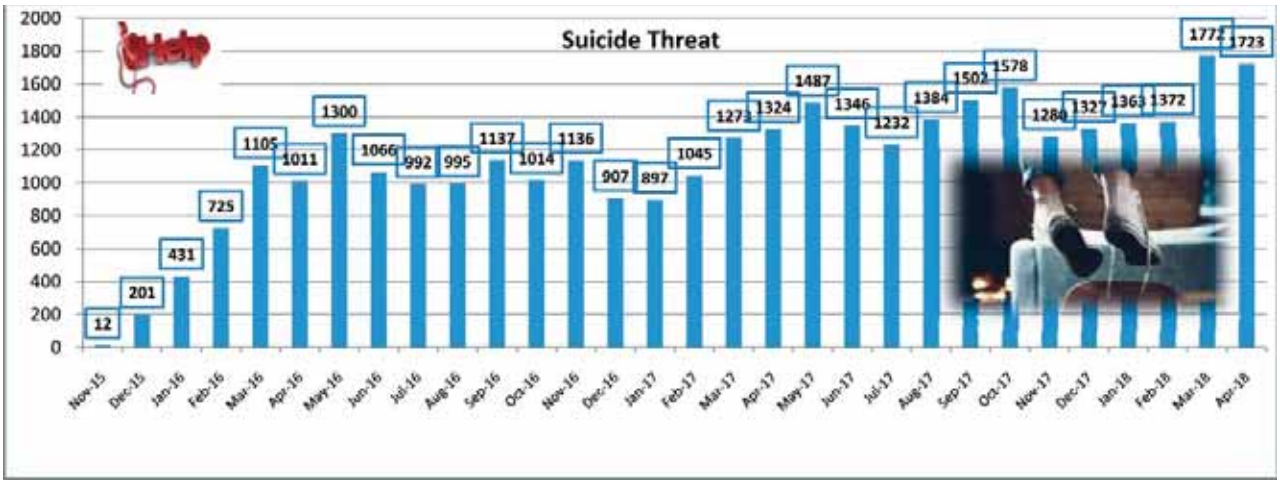


Top Ten Women related events

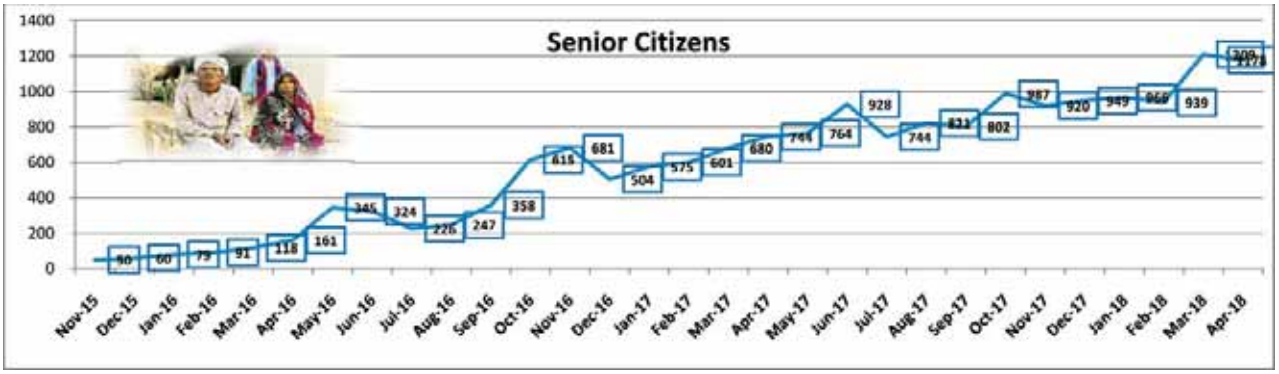
Events	Monthly Average	Feb-18	Mar-18	Apr-18	Grand Total
Family Disputes	10898	13770	18003	18746	316032
Domestic Violence	4007	2167	2672	2845	116192
Eve Teasing	1504	1090	1352	1127	43630
Beating Wife	1058	4940	5973	6210	30690
Kidnap Female	235	269	275	288	6814
Dowry Torture	159	125	153	178	4613
Rape Attempt	165	252	285	239	4787
Couple Indecency	124	124	125	100	3582
Child Marriage	129	117	83	558	3737
Rape	98	100	138	123	2845
Grand Total		**22954**	**29059**	**30414**	**532922**



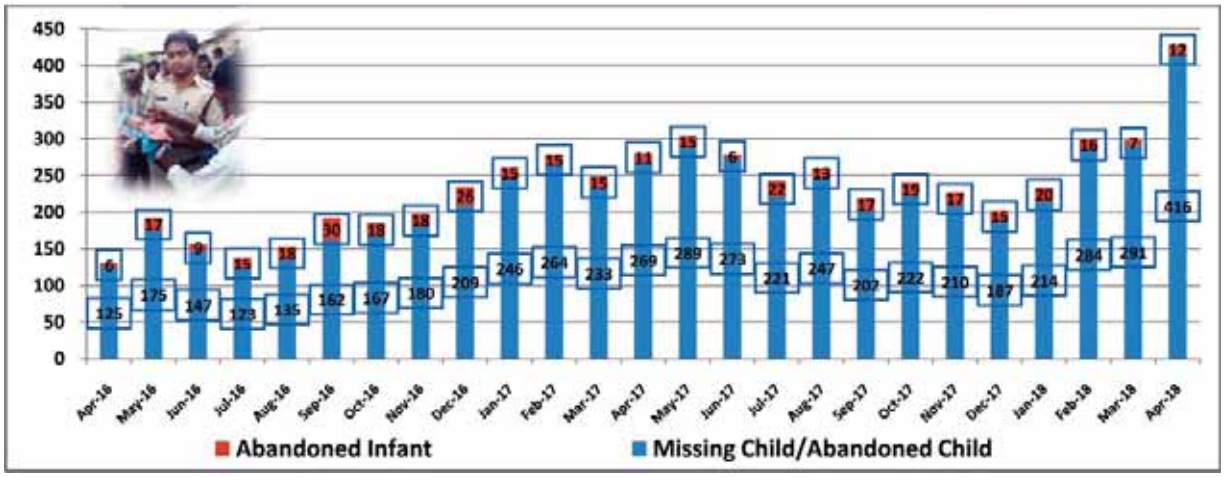
Suicide Threat Information



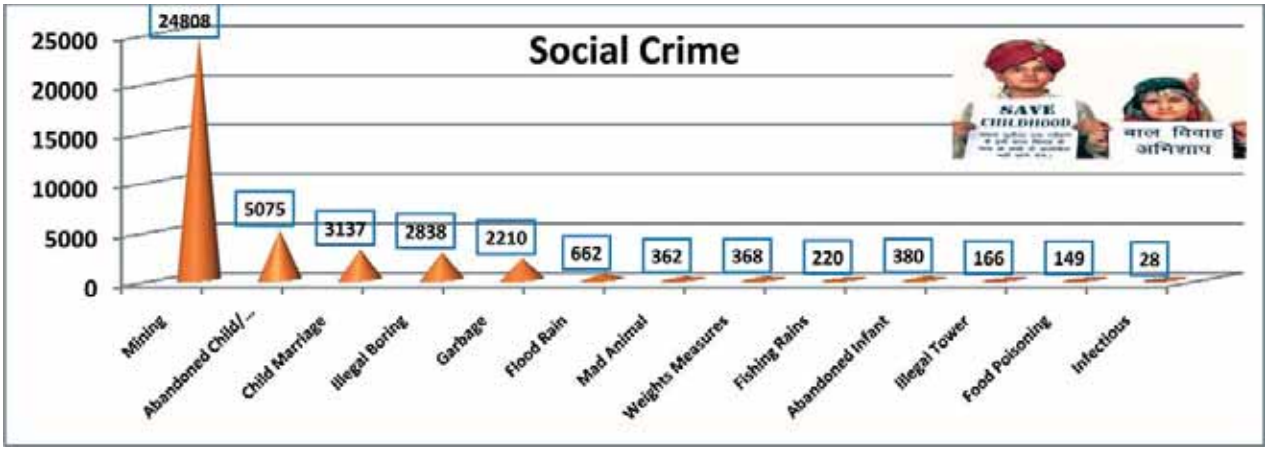
Senior Citizen Calls



Abandoned/ Missing Child Information April 16 to 30th Apr- 2018

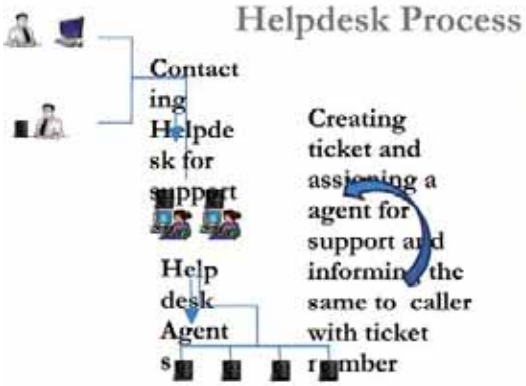


Social Crime/Non Crime Category Information



E-Ticking Tool

E-Ticket tool been created for logging of issues identified by various stakeholders of the project and a dedicated team is available to track and resolve the same in defined TAT.



Web portal (Netviewer)

Data access to DPCR, PS & all cutting edge level officers

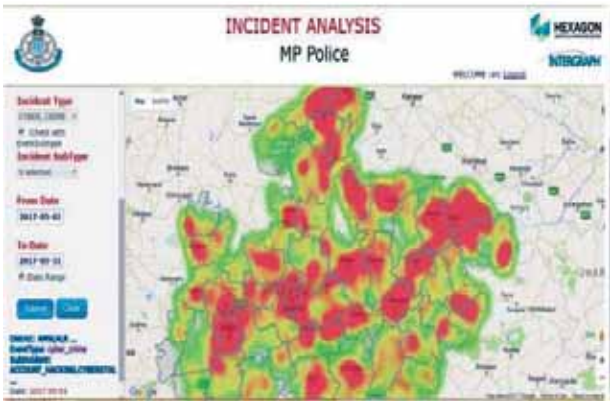
Regular updation on basis of feedback by field officers

Dashboard give access of statically analysis of calls, events, Emergencies, FRV tracking etc. to senior officers.

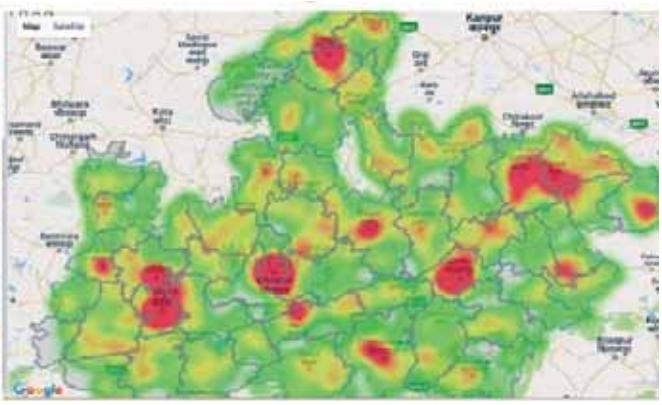
Business Intelligence Tools

We can retrieve and analyze the data available in any permutation &combination. We can generate heat map based on Time, Area, District, Festival, Event Type, Event sub Type etc.

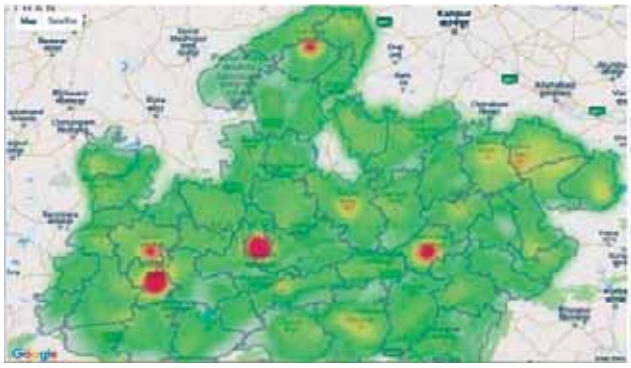
Cyber Crime Incident



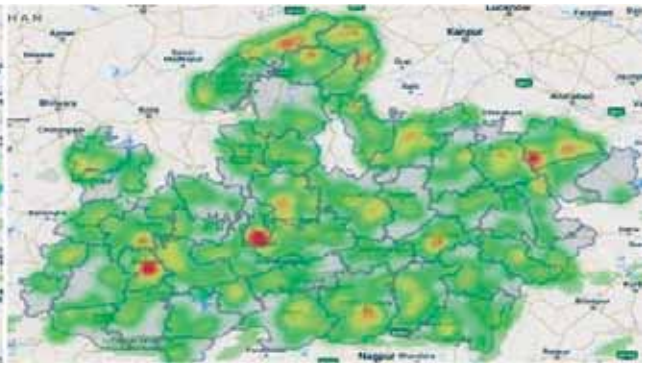
Eve Teasing



Family Disputes



Accidents



Population wise Call Analysis

State	Population	Actionable calls	Call received / lakhs	Dispatch	Event Dispatch / lakhs
Madhya Pradesh	7,30,77,565	1,62,622	**223**	1,64,034	**224**

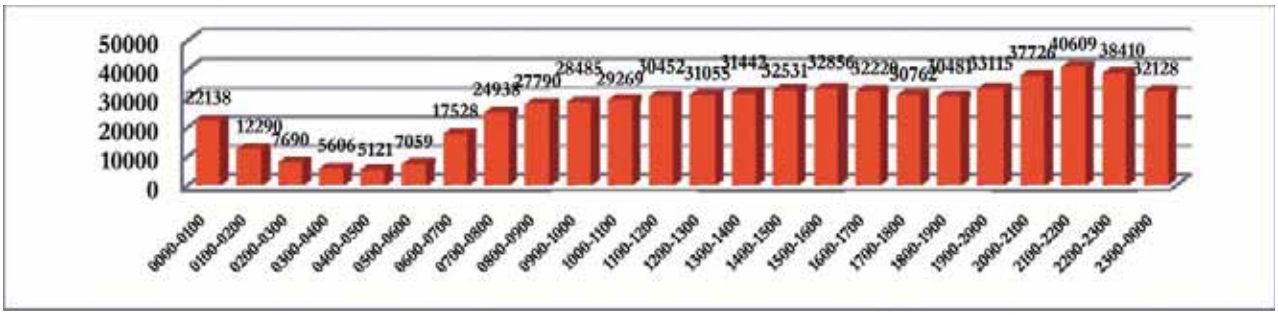
Top 5 Districts

District	Population	Actionable calls	Call received / lakhs	Dispatch	Event Dispatch / lakhs
Bhopal	23,68,145	10618	448	11144	471
Indore	32,72,335	11817	361	11991	366
Gwalior	20,30,543	7015	345	7233	356
Jabalpur	24,60,714	8382	341	8019	326
Ujjain	19,86,597	5254	264	5832	294

Bottom 5 Districts

District	Population	Actionable calls	Call received / lakhs	Dispatch	Event Dispatch / lakhs
Barwani	13,85,659	1397	101	1422	103
Shajapur	15,12,353	1642	109	1747	116
Balaghat	17,01,156	2288	134	2181	128
Alirajpur	7,28,677	962	132	993	136
Dindori	7,04,218	992	141	985	140

Average Hourly Call Analysis- Feb-2018



Best Practices

- Collection of PoI
- SOPs
- Helpdesk
- Feedback desk
- Establishment of ATR (Action Taken Report) Desk
- E-Ticket tool
- Monitoring module
- Interactive Voice Response (IVR)

Capacity Building and Change Management

Training and capacity building is integral part of the project. Continuous training and retraining and sensitization is given top most priority in the project.

- **Drivers Training at District level** –In this we train pilots to operate MDT, basic maintenance of FRV, repository of logbook and other documents w.r.t each FRV, Tools available in FRV & FRV maintenance.
- **FRV Police Staff and DPCR training in Districts** –In this we train Police staff to operate MDT and Net veiwer application. SI, ASI and constable are trained under this training module.
- **FRV staff, DPCR staff training in Bhopal** - In this we train Police staff about MDT, SOP's & Do's and Don'ts about movement of FRV's & resources.
- **Dispatcher training in Bhopal** - Details training on MDT, SOP's, CAD application and Avaya tool for call taking.
- **SHOS, DSPs, ASPs and master trainers training in Bhopal** - In this we train police personnel to operate MDT, Net viewer application, FRV dashboard, SOP's Do's and Don'ts about movement of FRV's & resources. SP's, CSP's, Add SP's, DySP's are also trained under this training module. They are imparting training in their districts, more than **6500** Police officers have been trained in Dial 100 Head Quarters, Bhopal and **35,000** Police personnel have been trained in districts. DGP himself addresses trainees quite frequently. He also addresses senior officers over video conferencing.
- **Training in training centers**– in this module we train recruit Constables , SIs and DSPs and upgrade their skill sets in various aspects of Dial 100, communication skills, SOPs, MDT and Net viewer operations.

- **Training of District Supervision & Call takers** –Details training on MDT, Net viewer, FRV dash board, CAD application and Avaya tool for call taking.

Impact of Central Emergency Response System: Police Accountability & Reform

- **Police Accountability**
  - All incidents recorded prior to police intervention
  - No burking possible
- **Police Impartiality**
  - Citizens Upload evidence in real time at heat of the moment.
  - Check and balance by FRV and Police Station
- **Confidentiality**
  - About 98% information about incidents passes on mobile devices to vehicles directly so that leakage of sensitive info stops
- **Transparency**
  - Recording of all calls by non-police officers
  - Complete automatic digital trail of all actions at different levels
- **Police Reform**
  - All call records stored for judicial purposes
  - RTI queries replied at district levels
  - Uploaded documents by citizens to be taken into investigations
- Fundamental police reforms are setting in. Immediate relief is provided to poorest of poor and weakest of weak persons through single toll free number. Democratization of police services is setting in.
- Services like police assistance, ambulance, fire brigade and debris clearance (crane) etc. is available on single nodal point.
- Complaints of not taking call on 100 number in PCR or talking rudely or not responding properly or not reaching on the spot or reaching late is controlled.
- Technology has brought transparency and accountability in policing.

- Complaint of not lodging FIR or delay in writing or keeping complaint and waiting at police station is controlled.
- Complaint of misbehaving, indifference, manipulation of records, false reporting/ afterthought etc got reduced due to time stamped real-time record keeping.
- Most of the victims / injured / witness are not required to go to police station
- Web portal and SMS based information system, real time information of important incidents of whole State is available to all police officers.
- Feedback and audit has improved the performance of the system.
- An efficient police and security system has enhanced the confidence of people in democratic system of the nation and delivery capability of the State.

Visitors @ Dial 100

MP dial 100 has been hugely popular not only in MP but also across the Country. Representatives of at least 20 state police organizations including from UP, Bihar, Chhattisgarh, Haryana, Odisha, Gujarat, West Bengal, Tamil Nadu, Karnataka, Kerala, Maharashtra, Punjab, Rajasthan and North Eastern states have visited it so far. Probationers and officers from National police Academy, AIS trainees from RCVP Naronha Academy of Administration, Central Academy of Police Training, Indian Institute of Forest management, Students and teachers from various Universities keep on visiting our facility.

- **Leicestershire Police (U.K.)** has also visited the facility of Dial 100 and they are studying the Project as a model of police emergency service delivery.
- MP Dial 100 is a subject of study of J-PAL project of M.I.T. U.S.A.
- **Students from MLC university of Mass Communication Bhopal and many engineering colleges are doing summer training at MP Dial 100.**

Awards & Recognition

The biggest award is the satisfaction and appreciation of the citizens. Print and electronic media is full of success stories. Endorsements and appreciation over social media platforms encourages us always. Law makers from ruling as well as opposition political parties support MP Dial 100 in all sessions of Legislative assembly over budget and other discussions during committee meetings. We have been awarded liberally by different organizations:-

1. Hexagon Safety and Infrastructure Icon Award – 2016.
2. FICCI Smart Policing Award – 2017.
3. SKOCH Platinum Smart Governance Award – 2017.
4. Geospatial World Excellence Award – 2018.

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In the light of our experience from Dial 100 and our learning from UP and elsewhere where CERS has been implemented, of course with local modifications, we propose that every State Police should set up a modern Emergency Response System and in that it should have following minimum functionalities/features/services-

1. Call taking by persons independent of local police, having 'empathy' not 'authority' in the attitude.

2. Automated recording of all calls- complete voice logging and CCTV recording of call taking & dispatching rooms.

3. GIS Maps with navigation facility.

4. Location based services for correct record of 'occurrence spot'.

5. Feedback system – independent Third Party.

6. Dedicated response mobility and dedicated staff for first response.

7. Response Vehicles to be fitted with MDT, Police Wireless, GSM mobile, Smartphone, First Aid Box, Fire Extinguisher, Accident Extraction kit, Basic Anti Riot Equipments.

8. Minimum 2 Police personnel with driver in each vehicle in each of three shifts a day as first responder.

9. GPS and CCTV fitted response vehicles.

10. Body worn camera equipped first responders.

11. Predefined SOPs for deciding -

    i. What Information will be responded?

    ii. Who will respond?

    iii. Within what time it will be responded?

12. System should be the master in response 'speed' & quality decision making and not the person on the chair be it SHO, CO, SP, or Police Chief – as a rule. Exceptions must be recorded for post-response third party analysis.

13. Taking Information (Call for Assistance) on non voice medium as well- like, SMS, E-Mail, Social Media directly or through special arrangement with interpreters.

14. Attending calls in State language as well as in language of neighbouring States, English, Local dialects, Foreign language and speech impaired callers.

15. Standard response time – Commitments of 5 minutes in urban areas and 5 minutes + travel time in rural areas.

16. Integration of Medical, Fire, Disaster response, Women helpline, Child helpline etc. and pre-defined SOP for sharing information with specialised responders like NDRF, SDRF, NSG, Civil Aviation & other agencies on need basis.

Gratitude:

I express sincere thanks and gratitude to Shri Anil Agrawal IPS, ADG UP currently JS DIPP GoI, Shri Amit Saxena SP Dial 100 MP, Shri Devendra Singh Projector Director, PMC Grant & Thornton for their valuable contribution in providing inputs to this write up.

Anvesh Manglam,
Additional Director General of Police, MP

"Better Traffic Management"

BETTER TRAFFIC MANAGEMENT

The spectacular growth of vehicular traffic in developing countries has resulted in traffic congestion, pollution, longer journey time and increased road accidents. In the last couple of decades, Indian Metropolitan Cities have experienced rapid urbanization, unprecedented growth of Industry, Commerce and Employment and thereby adding millions of vehicles. Today the Indian Metros like New-Delhi, Mumbai, Kolkata, Chennai, Bangalore and Hyderabad have between them more than 15 million vehicles. But there has been no commensurate growth in the road infrastructure. The resultant scenario is that there are too many vehicles on the road occupying a limited space. Therefore, the greatest challenge for civic authorities and Police in these cities is Traffic Management, more than providing civic amenities and security to citizens.

The enormous traffic problems of Indian Metropolitan cities can be attributed to the following:

a) Indian cities do not have a good mass public transport system, except Mumbai and Kolkata wherein the commuter rail system caters to the needs of transportation of millions of commuters. DTC and BMTC are the only public transport system in Delhi and Bangalore respectively. Other cities do not have organized public transport systems. This has resulted in an increase in personalized modes of transport like two-wheelers and cars which consume the road space and result in congestion.

b) The rise in income levels of urban households in general and metropolitan cities in particular has raised the standard of living. Economic prosperity has created huge demand for consumer products as well as increasing the capacity of people to go in for luxuries like personal vehicles etc. This has resulted in an enormous growth in number of vehicles purchased. Table 1 indicates the growth of vehicular traffic in major metropolitan cities:

Table 1: Total Registered Motor Vehicles in Metropolitan cities of India

(in thousands)

Sl. No.	Cities	2001	2004	2008	2016
01	Ahmadabad	846	1075	1410	3198
02	Bangalore	1593	1891	3175	7008
03	Chennai	1257	2015	`2240	4457
04	Delhi	3635	4237	4844	8500
05	Hyderabad	951	1356	1811	2327
06	Kolkata	664	875	1120	2809
07	Mumbai	1030	1199	1640	2333

The vehicular growth of a single metropolitan City i.e. Bangalore can be seen in the following table and graph:

Table-2 Vehicle Populations in Bangalore City:

YEAR	1980	1985	1990	1995	2000	2004	2008	2012	2017
TOTAL VEHICLES	175325	306589	601059	870659	1438057	2157480	3175130	4453000	7258889

Figure: 1: Growth of Vehicles in Bangalore:

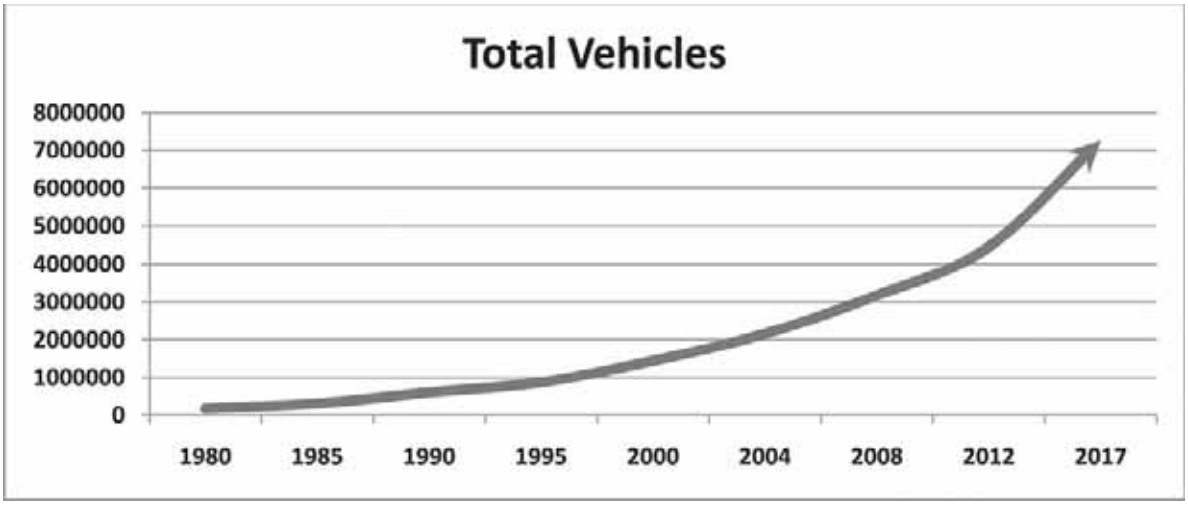


Figure: 1: Graph Showing growth of vehicles in Bangalore city:
(Source: Bangalore city traffic police)

c) The increased intensity of traffic, combined with the inherited radial pattern of roads, has resulted in acute traffic congestion in and around the Central Business Districts in the cities. People moving from one part of the city to another part have to travel through the Central Business Districts (CBD) leading to huge congestion in the CBD area, e.g.: a person in Bangalore travelling from Jayanagar to Malleswaram has to unnecessarily pass through Hudson Circle. Lack of core ring roads connecting different parts of the city has resulted in heavy congestion in the city center of all metros.

d) The limited road space available is further reduced due to on-street parking. Off-street parking facilities, multi-level car parking or parking lots are insufficient in the city. This has resulted in congestions in commercial areas of Indian cities.

e) It is difficult to differentiate commercial areas with residential areas in urban towns. Residential areas have free commercial activity leading to congestion, pollution and narrowing the road space due to parking. A city ideally should have 17% of its area for traffic and transportation. At present only around 8% is available for this purpose in metros.

f) The major problem of traffic management in Indian cities is the existence of multiple agencies or departments who work in isolation. The municipal corporations are responsible for road maintenance, Urban Development authorities are responsible for road development, Traffic Police is responsible for traffic regulation and enforcement, Transport Corporation is responsible for providing public transport etc. The functioning of these agencies is not properly co-ordinated. The agencies are doing their jobs independently and thus conclusive and inclusive actions are not possible. Many at times, Police is not consulted during road construction and creation of transport infrastructure.

g) Rampant indiscipline among road users is largely attributed to frustration due to traffic congestion. Most of the road users are not aware of the traffic rules and regulations. There is no proper mechanism either in Transport department or in Traffic Police to educate the road users about the traffic rules and regulations. Lack of adequate training and professional approach amongst the traffic policemen are the main reasons for poor enforcement. Since the Transport department is not fully computerized, the violators of traffic rules booked by traffic police go scot-free as it is very difficult to trace the offenders. The automation enforcement system introduced in Traffic Police in Bangalore city, a few years ago, has resulted in imposition of penalty on only about 20% of the total traffic violators.

In order to overcome the traffic problems in Metropolitan cities the following strategic management solutions are recommended:

1. Integration of Land use and transport planning:

Transport planning is intrinsically linked to land use planning and both need to be developed together in a manner that serves the entire population and yet minimizes travel needs. In short, an integrated master plan needs to internalize the features of sustainable transport systems. In developing such plans, attention should be paid to channel the future growth of a city around a pre-planned transport network rather than develop a transport system after uncontrolled sprawl has taken place. In city municipal Corporations and Urban Development Authorities sustainable representations should be given to transport planners as well as representatives from transport department and traffic police. All new layouts formed in the outskirts should have a minimum of 20% area earmarked for transportation and traffic purposes. Zoning regulations should not be relaxed as it will lead to danger for traffic related problems due to land misuse.

2. Priority to the use of public transport:

It is well known that public transport occupies less road space and causes less pollution per passenger-km than personal vehicles. As such, public transport is a more sustainable form of vehicles. Therefore, the State Governments should promote investments in public transport as well as measures that make its use more attractive than in the past. Towards this end, the State Governments should encourage all 5 metropolitan cities as well as other cities with a population of more than one million to start planning for high capacity public transport systems. In doing so, they should look at various proven technologies around the world, including the use of available waterways. They should adopt a technology that would best suit the

city requirements in the next 30 years. The Police leadership in the state should prevail upon the Government to initiate adequate measures to promote public transport and reduce personalized vehicles.

3. Integrated Public Transport systems and last mile connectivity:

All cities have corridors that have varying densities of travel and hence need technologies that best match the level of demand on the corridor. This often requires different operators managing such systems. However, a good public transport system is one that is perceived by the user as a single system and allows seamless travel between one mode and the other as also between systems managed by different operators. Such seamless interchange is possible if proper inter-change infrastructure is available and users are able to use a single ticket over all such systems. Newly established aggregator taxi and Ride Share needs to be facilitated to reduce dependency on private vehicles. This also requires that a single agency takes responsibility for coordination so that there is a common approach to public transport planning and management.

4. Unified Traffic Management Authority:

Traffic management being under different agencies in a city makes it difficult for co-ordination and implementation of the project. Who will prepare transportation plans – Development Authority as a part of overall perspective, Urban Development Plan or the Municipality or the Traffic Police Department?

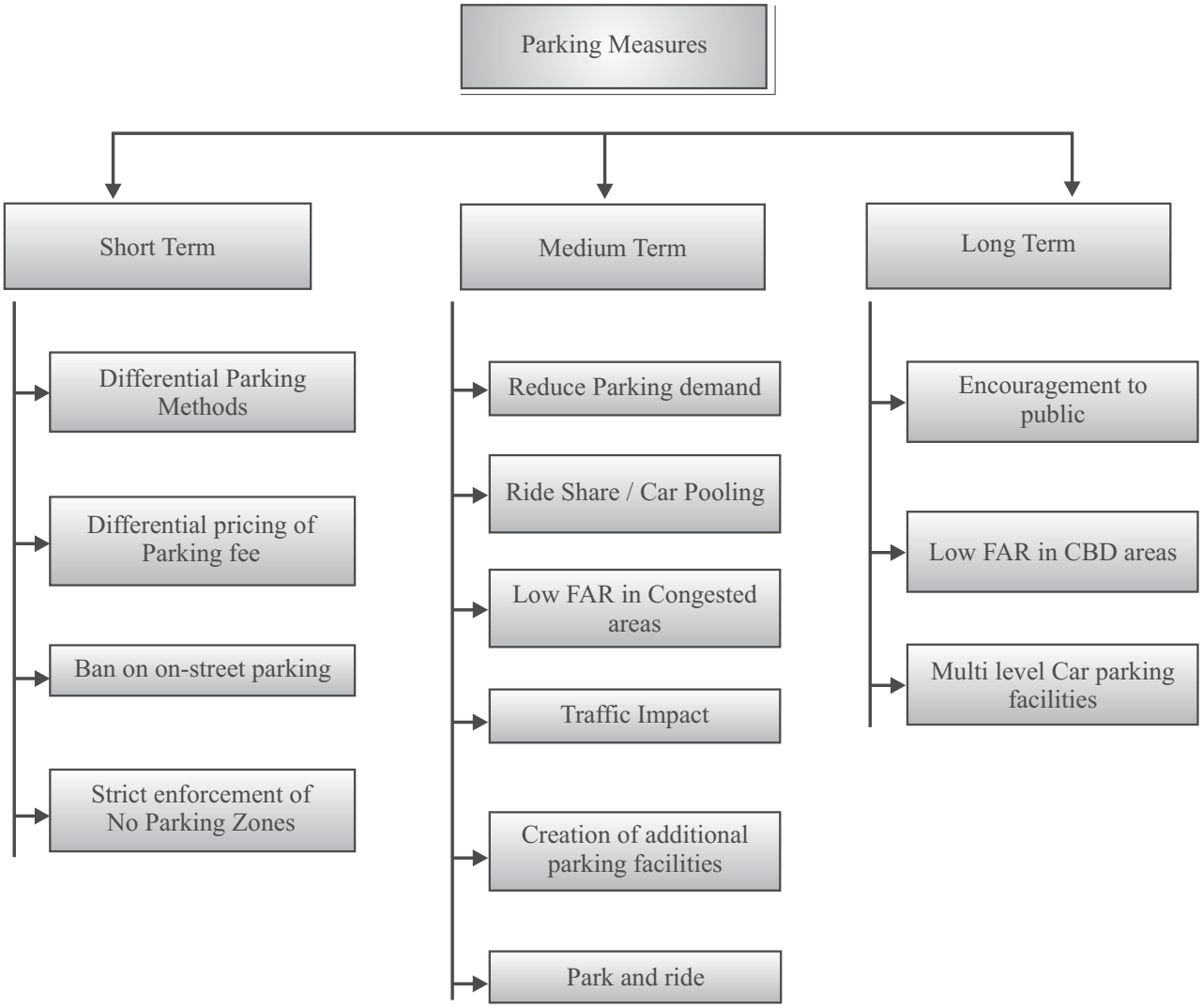
In view of these, it has been often argued that metropolitan cities are required to have Unified Metropolitan Transport Authority (UMTA). This will help to co-ordinate different functions of different agencies and will enable to incorporate programmes and prepare integrated transportation development plans and programmes. The UMTA should be headed by the Commissioner of Police of the City for better co-ordination.

5. Parking Management:

Land is valuable in all urban areas. Parking places occupy large portions of such land. This fact should be recognized in determining the principles for allocation of parking space.

Levy of a high parking fee, that truly represents the value of the land occupied, should be used as a means to make the use of public transport more attractive. Preferences in the allocation of parking space for public transport vehicles and non-motorized modes as well as easier access of work places to and from such spaces would go a long way in encouraging the use of sustainable transport systems. Park and ride facilities for bicycle users, with convenient interchange, would be another useful measure. Simultaneously, a graded scale of parking fee, that recovers the economic cost of the land used in such parking should be adopted. The objective would be to persuade people to use public transport to reach city centers. The Police authorities and civic agencies should evolve a comprehensive parking policy for metropolitan cities which should contain short term and long term strategies for attaining optimal parking standards. Some of the suggested Parking Strategies are shown in Table-3.

Model Parking Strategy for Cities



6. Use of Cleaner technologies for Pollution Control:

New technologies always find it difficult to enter an established market and new auto fuel technologies would also face this problem. However, in view of their many advantages, they would be offered suitable concessions and benefits that would enable them to make an entry and compete with established technologies on more equitable terms. It is expected that such competition will also encourage established technologies to improve their performance characteristics and compete with the emerging choices/alternatives. Karnataka State Road Transport Corporation (KSRTC) has introduced Bio-fuel for use in its buses, on an experimental basis. 7.7% of ethanol is mixed with diesel to reduce vehicular pollution. Such innovation should be emulated for reducing pollution levels.

7. Encouragement to non-motorized transport:

Non Motorized transport like cycling should be encouraged for short trips. With increasing urban sprawl and rising income levels, non-motorized transport has lost its earlier importance. However, non-motorized modes are environmentally friendly and have to be given their due share in the transport system of a city. The problems being faced by them would have to be mitigated. First of all, the safety concerns of cyclists and pedestrians have to be addressed by encouraging the construction of segregated rights of way for bicycles and pedestrians. Apart from improving safety, the segregation of vehicles moving at different speeds would help improve traffic flow, increase the average speed of traffic and reduce emissions resulting from sub-optimal speeds. Such segregated paths would be useful not only along arterials, to enable full trips using non-motorist transport (NMT) but also as a means of improving access to major public transport stations. Such access paths coupled with safe bicycle parking places, would contribute towards increasing the use of public transport. Creative facilities like shade giving landscaping, provision for drinking water and resting stations along bicycle corridors would also be encouraged as they can mitigate, to a large extent, adverse weather conditions.

8. Effective Utilisation of Alternate Roads:

Generally in larger cities, many roads and streets remained underutilized. Whereas majority of the roads have traffic congestion and jams. There is a need to ensure optimal utilisation of the entire road network by utilising all the under-utilised roads and streets.

9. Pedestrial Facilities:

Pedestrians form a major proportion of commuters (about 25% to 30%). Though they are short distance travelers, they are spread all over the city. As facilities furnished for them are encroached upon by vendors or for road space, they have to spill on roads. These contribute to accidents also. One alternative for their facility and controlling their spill on roads is to provide railings along foot paths, where provided or on the road covering about one meter width on either side of the road with openings at desired crossing points. Another alternative is to develop some narrow roads specially adjacent to major arterials as "pedestrians only" roads. But baby and foot paths at bus stops can also help in restraining their spill on to carriageways and reducing accidents.

10. Intelligent Transport System (ITS):

Intelligent Transport Systems is a collective name for a number of technology-based approaches that are designed to improve the quality, safety and efficiency of transport networks. The systems often combine communication, processing and data storage modules to provide integrated travel information and traffic management systems from one or more organizations. The systems collect information about the current state of transport network, process that information, and either directly manage the network or allow the people to decide how best to use the network.

The important ITS user services are:

1) Area Traffic Control Systems for effective traffic signal system

2) En-route Driver Information System

3) Route Guidance

4) Travel Demand Management

5) Traveler Service Information

6) Emission Testing and Mitigation

7) Automation Challaning System / contact-less enforcement

8) Vehicle information and Communication System

9) Parking Guidance System

11. Traffic Regulatory Measures:

Many of the roads in metropolitan cities carry traffic volume more than the capacity of the road. The inevitable result is delay in journey time, congestion and accidents. This can be removed by imposing regulatory measures and using traffic control techniques so as to make the most economic use of the roads. The Traffic control measures include traffic signals, restriction of speed, parking of the vehicles etc. Traffic regulatory measures include regulating the traffic on roads in such a way that the vehicle capacity ratio is optimally maintained.

The fundamental approach in traffic management measures is to retain as much as possible the existing pattern of street but so alter the pattern of traffic movement on these so that most efficient use is made of the system. In doing so, minor alterations to traffic lanes, islands, curb etc., are inevitable and are part of management measures. Some of the well-known traffic management measures are:

1) Restrictions on turning movement

2) One way street

3) Tidal flow operations

4) Exclusive Bus-lanes

5) Closing side-streets

6) Alternate routes

7) Traffic gating

These measures are generally short term in nature. For example, conversion of two-way roads into one-way will solve the traffic congestion only for a few years. Once the volume of traffic increases, then one-ways also become congested in due course. Bangalore city is also known as one-way city because of innovative one ways implemented in recent times. Similarly, Mumbai is a good example of tidal flow operation wherein depending upon the peak traffic, additional lanes are provided for peak flow of traffic in the morning and the same is reversed for the evening peak traffic.

12. Introduction of staggered working timings for offices and educational institutions:

Staggering of working hours of offices and educational institutions result in spread over of peak hour. Presently, the peak hour starts at around 9.00 and ends at around 11.00 in the morning and starts at 5.00 in the evening up to 7.30 p.m. Staggering of office and school timings will have a positive impact as traffic can be reduced during the above peak timings. Safe route to school project, initiated by the Bangalore Traffic Police, has largely helped in

reducing traffic congestion as school starts before 9.00 a.m. Similarly, many IT industries have staggered their work schedules to suit smooth journey from residence to place of work. Similar staggering of office timings of State Government and Central Government departments may result in reducing traffic congestion during the traditional peaking timings.

13. Greater emphasis on educating road-users:

Road users must be explained about the traffic rules and regulations through different media like press, posters, pamphlets, slides in theatres, banners etc. If possible, the road users should be educated about the traffic rules and regulations by conducting awareness camps in which safety of road users should be taught. Habitual and repeated offenders should be made to undergo training sessions in the traffic training institutes established by the Traffic Police.

14. Modernisation of Traffic Police:

National Police Mission Compendium on Projects : National Security Strategy The existing strength of traffic police personnel is not sufficient to meet the requirements of unwanted situations like accidents, processions, traffic jams etc. Augmentation of traffic police strength should be done in priority. Traffic police personnel should be trained in proper way to manage the traffic efficiently. The present system of multi functional police work like law and order, crime and traffic management should be dispensed. The Traffic Police should have separate cadre, trained exclusively in traffic regulations and enforcement. Apart from this, they should be equipped with modern enforcement devices to bring greater discipline on roads. Some work has already happened in the B-TRAC Project of the Government wherein automatic enforcement has been introduced.

There is a strong resistance from the road users about the behaviour of traffic police. Hence, there is a need to educate the traffic police about human values, morals and respect to elderly persons etc., which are to be necessarily followed during discharging their duties.

CONCLUSION:

The above strategic Traffic Management options may be adopted by City police leadership and civic agencies to achieve traffic decongestions in all Indian cities. While some recommendations can be implemented in the short run, some would require a long term perspective. If implemented systematically these sustainable measures will go a long way in making our cities and urban areas more livable.

- **Shri Maithili Sharan Gupta,** Spl. DG, Madhya Pradesh
- **Shri T. Krishna Prasad,** DG, Road Safety, Telangana
- **Shri Dr. M.A. Saleem,** ADG, Karnataka
- **Prof. Sudipto Mukherjee,** IIT, Delhi
- **Shri Sanjeev Kumar,** SLS Transport, Bangalore

NATIONAL POLICE MISSION DIVISIOIN

Officials who contributed for the conduct of preliminary conferences at BPR&D, and the National Security Strategies Conference at Vigyan Bhawan, New Delhi and for Publication of this Compendium.

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2.	I.D. Singh	Superintendent of Police
3.	Devbrat Negi	Superintendent of Police
4.	B.M. Joshi	Assistant Director

Support Staff

Sl. No.	Name	Designation
1.	Rajeev Kumar	Personal Assistant
2.	Rajesh	Assistant
3.	Indu Naswa	Personal Assistant
4.	Pradeep Kumar	LDC