



2nd

NATIONAL CONFERENCE FOR YOUNG SUPERINTENDENTS OF POLICE FROM STATES / UTs AND COMMANDANTS OF CAPFs



PROCEEDINGS

26th and 27th JULY, 2018

BPR&D Head Quarter, Mahipalpur, NEW DELHI

BUREAU OF POLICE RESEARCH AND DEVELOPMENT

Promoting Good Practices and Standards
The Think Tank for Indian Police

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FROM STATES / UTs AND COMMANDANTS OF CAPFs





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FOREWORD



Bureau of Police Research and Development (BPR&D), has now emerged as a National Think-Tank on Policing. Modernization Division of BPR&D organized 2nd National Conference for Young Superintendents of Police (States/UTs) and Commandants of CAPFs on **July 26-27, 2018**. This Conference was clubbed with a two-day **Police Expo and Conference 2018** in association with FICCI.

2. The Theme of the Exposition and Conference was **“Predictive Policing and Contemporary Challenges for Indian Police Forces”** and aims to create awareness among young Superintendents of Police from States and Commandants from CAPFs, regarding latest technologies in areas such as Artificial Intelligence; Predictive Policing / Crime Analytics/ Big data Analytics; Geospatial Technology; Cyber Crime; Surveillance Tracking & UAVs; CCTV Equipment, for effective delivery of Police Services to citizens. About 100 young Superintendents of Police throughout the country and other senior Police officers participated and benefitted immensely.
3. The conference was inaugurated by **Shri Rajnath Singh, Hon'ble Union Home Minister** and **Dr. Kiran Bedi, Hon'ble Lt. Governor of Pudducherry** was the chief guest during the valedictory session.
4. A Screening Committee consisting experts and senior police officers was constituted by the Bureau to evaluate products and technologies of the exhibitors and report submitted by the Committee is the part of the Proceedings.
5. I am happy to share documented comprehensive proceedings of the conference through this booklet. I am thankful to all speakers, young officers and guests for their active participation and contribution to this Conference.

A. P. Maheshwari
(Dr. A P Maheshwari)

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POLICE EXPO 2018 | **2nd YOUNG Superintendents of Police Conference 2018**
Predictive Policing & Contemporary Challenges for Indian Forces

MINUTE TO MINUTE PROGRAMME

July 26-27, 2018

BPR&D Hqrs, Ministry of Home Affairs, NH-8, Mahipalpur, New Delhi

(Agenda as on July 25, 2018)

Day 1 (July 26, 2018, Thursday)

Time	Session
0830 – 0930 hrs	Registration
0930 – 1030 hrs	Inaugural Session <i>Lamp Lightning & Inauguration of the programme</i> <i>Welcome Address: Mr. V. H. Deshmukh, ADG, BPR&D</i> <i>Address by Mr. Y. K. Modi, Past President, FICCI & Executive Chairman, Great Eastern Energy Corporation Ltd</i> <i>Address by Dr. A. P. Maheshwari, Director General, BPR&D</i> <i>Address by Mr. Rajiv Jain, Director, Intelligence Bureau</i> <i>Inaugural Address: Shri Rajnath Singh, Hon'ble Union Home Minister, Govt. of India</i> <i>Vote of Thanks: Mr. Rahul Chaudhry, Chair, FICCI Homeland Security Committee</i> <i>Session Moderated by Mr. Sumeet Gupta, Senior Director, FICCI</i>
1030 – 1200 hrs	Break & Visit to Exhibition
1200 – 1300 hrs	Session 1: Technologies for Predicting Offenders, Predicting Perpetrator Identities & Predicting Crime Victims <i>Today, predictive policing is one of the biggest — and most hotly debated — topics in the field of criminal justice. Police departments have begun to augment traditional forecasting with computer algorithms to determine where crime is likely to happen, and who is likely to commit it. In this session, the panellists will highlight some of the emerging technologies that could be deployed by law enforcement agencies for predictive policing.</i> <i>Chair: Dr. Avik Sarkar, Head – Data Analytics Cell, NITI Aayog, Govt. of India</i> <i>Lead Speaker: Mr. Akshya Singhal, Partner, Advisory Services, EY</i>

	<p>Distinguished Panellists:</p> <ul style="list-style-type: none"> ● Mr. Radhakrishna B, Director, Director Risk & Fraud Management Practice, SAS India ● Mr. Sanjoy Sarma, Chief Products & Solutions, Tata Power SED ● Mr. Rajesh Mathur, Chair, FICCI Committee on Geospatial Technologies, and Advisor, ESRI India ● Criminologist Snehil Dhall, Founder & Director, Crimeophobia
1300 – 1400 hrs	Break & Visit to Exhibition
1400 – 1500 hrs	<p>Session 2: Safe Cities V/s Smart Cities</p> <p><i>It is important to clearly differentiate between the smart city and the safe city- two terms that have been typically confused or transposed in use. Safe City projects typically focus on improving the safety of citizens. Smart cities, on the other hand, tend to have different drivers. Improved public transportation and intelligent infrastructure are amongst these key components. In this session the Panellists will discuss on how smart and safe cities have challenges ahead in the road to security.</i></p> <p><i>Chair: Mr. Rakesh Asthana, Special Director, Central Bureau of Investigation (CBI)</i> <i>Lead Speaker: Mr. Anvesh Manglam, Additional Director General, Madhya Pradesh Police</i></p> <p>Distinguished Panellists:</p> <ul style="list-style-type: none"> ● Mr. Subodh Vardhan, Managing Director, Motorola Solutions ● Ms. Ritu Saini, Acid Attack Survivor & Campaigner 'Stop Acid Attack' ● Mr. Shishir Verma, Sr. Vice President, MapmyIndia
	<p>Session 3: Public Procurement in Internal Security – Way Ahead</p> <p><i>Although the CAPFs & State Police Forces are guided by the same policies and guidelines for public procurement as the other government organizations, the nature and requirements of public procurement process for police forces is different from that of the general government departments. In this session panellists will highlight the industry perspective of the numerous challenges for procurement by Internal Security forces, in the areas of policies and regulations, processes, technological advancements and capacity-building.</i></p> <p><i>Chair: Mr. Alok Joshi, Chairman, National Technical Research Organisation (NTRO)</i> <i>Lead Speaker: Mr. Rajiv Aggarwal, Joint Secretary, Department of Industrial Policy & Promotion, Govt. of India</i></p> <p>Distinguished Panellists:</p> <ul style="list-style-type: none"> ● Col. H. S. Shankar, VSM, Chairman, FICCI Space Committee & CMD, Alpha Design Technologies ● Mr. Vaibhav Gupta, Director, MKU ● Mr. Ashok Kanodia, Managing Director, Precision Electronics
1600 - 1630 hrs	Break
1630 - 1730 hrs	<p>Session 4: Predictive Policing and Emerging Trends in Cyber Crime</p> <p>Mr. Sanjay Sahay, ADG, Karnataka Lokayukta</p>
1730 onwards	Visit to Exhibition

Day 2 (July 27, 2018; Friday)	
Time	Session
0830 – 0930 hrs	Registration
0930 – 1030 hrs	<p>Session 5: SP-Talk–by visionary Superintendent of Police officers</p> <ul style="list-style-type: none"> ● Mr. Harendra Kumar, Superintendent of Police, Sri Ganganagar, Rajasthan ● Mr. Veenu Bansal, Deputy Commissioner of Police, Delhi ● Mr. Hemant Jha, Commandant, BSF1030 – 1130 hrs <p>Session 6: Next Generation Technologies for SMART Policing</p> <p><i>India needs a long term and focused approach to develop technology and solutions to meet its internal security challenges- especially to address the requirements of CAPFs and State Police Forces. Homeland Security has distinct requirements in terms of complexities and challenges as the threats arise on account of various factors such as social structures and inherent inequities; therefore, a different approach would be essential.</i></p> <p><i>The session aims to highlight the advancements in technology for SMART Policing which could be deployed by various internal security forces.</i></p> <p>Chair: Mr. Vivek Bhardwaj, JS (PM), MHA</p> <p>Distinguished Panellists:</p> <ul style="list-style-type: none"> ● Speaker from Hexagon Geospatial ● Ms. Sangeeta Das, Founder, Collaborative Intelligence India Ltd. ● Mr. Anshu Gulati, Director, Security Shoppe
1130 – 1215 hrs	<p>Session 7: Predicting Cyber Crime Against Women: Is it Possible?</p> <p><i>Crime prediction is the latest emerging concept for Law Enforcement Agencies (LEAs); and the available technology for its implementation is so new that just a handful of LEAs around the world presently use it. In this session the Panellists will discuss the possibility of predicting online crime especially cyber-crime against women.</i></p> <p>Chair: Ms. Vasvi Bharat Ram, Immediate Past President, FICCI – FLO and Joint Vice Chairperson, Shri Ram School</p> <p>Distinguished Panellists:</p> <ul style="list-style-type: none"> ● Col. Ajay Rajpurohit, Executive Advisor, Vital Intelligence Group ● Mr. Santosh Kumar, CEO & Founder, Group Cyber ID ● Mr. VibhuAnand, Director & Founder, Cyint
1215 – 1230 hrs	Break

1230 – 1330 hrs	Valedictory Session
	<p>Welcome Address and Summing up report of 2nd Young Superintendents of Police Conference and Police Expo - 2018: Mr. V. H. Deshmukh, ADG, BPR&D</p> <p><i>Address by</i> Mr. Rahul Chaudhry, Chair, FICCI Homeland Security Committee</p> <p><i>Address by</i> Dr. A. P. Maheshwari, Director General, BPR&D</p> <p><i>Valedictory Address:</i> Dr. Kiran Bedi, Hon'ble Lt. Governor of Puducherry</p> <p><i>Vote of Thanks:</i> Mr. Dilip Chenoy, Secretary General, FICCI</p> <p><i>Session Moderated by</i> Mr. Sumeet Gupta, Senior Director, FICCI</p>
1330 – 1430 hrs	Break & Visit to Exhibition
1430 – 1600 hrs	Workshop on SMART Policing (<i>For Police officials only</i>)
1430 – 1500 hrs	<p>Enforcement of Intellectual Property Rights: <i>Role of Police</i></p> <ul style="list-style-type: none"> ● Mr. Sumit Kapoor, Assistant Manager, Enforcement Cell for IPR Promotion & Management (CIPAM), Department of Industrial Policy & Promotion
1500 – 1530 hrs	<p>Digital Forensics for Law Enforcement Agencies</p> <ul style="list-style-type: none"> ● Mr. Arun Dixit, Head R&D, NTRO
1530 – 1600 hrs	<p>Use of Artificial Intelligence for Internal Security</p> <ul style="list-style-type: none"> ● Mr. Vipul Kaushik, Director –IT Advisory, Enterprise Intelligence & Analytics, EY



POLICE EXPO 2018 | **2nd YOUNG Superintendents of Police Conference 2018**
Predictive Policing & Contemporary Challenges for Indian Forces

PROCEEDINGS

July 26-27, 2018

BPR&D Hqrs, Ministry of Home Affairs, NH-8, Mahipalpur, New Delhi

The Bureau of Police Research and Development (BPR & D), Ministry of Home Affairs, organised the 2nd young Superintendents of Police from States/UTs and Commandants of CAPFs on 26th and 27th July, 2018 at the BPR & D Headquarters, New Delhi, under the guidance of Dr.A.P. Maheswari, Director General, BPR & D. Pursuant to the resolution passed during the DsGP / IsGP Conference 2016 held at Hyderabad, to train sub-ordinates on the latest technologies, techniques in investigation and trends in crime, the Bureau had organized a two day National Conference (**Theme: Technological Empowerment for Impactful Policing**) for young Superintendents of Police (States/UTs) with 5-10 years of service experience on 01st and 02nd August, 2017 at Vigyan Bhawan, New Delhi.

2. The 2nd young SPs Conference was organised by the Bureau in harmony with the earlier endeavour, with the theme of “**Predictive Policing and Contemporary Challenges for Indian Police Forces**”. The aims of the event were to create awareness among young Superintendents of Police from States and Commandants from CAPFs, regarding latest technologies in areas such as Artificial Intelligence; Predictive Policing / Crime Analytics/ Big data Analytics; Geospatial Technology; Cyber Crime; Surveillance Tracking & UAVs; CCTV Equipment, for effective delivery of Police Services to citizens.

3. BPR&D in association with FICCI also organized a **Police Exposition** along with the 2nd National Young Superintendents of Police Conference 2018 in order to provide the participants exposure and awareness of evolving quality standards.

4. The event was inaugurated by the **Hon'ble Union Home Minister Shri Rajnath Singh** and the closing address was delivered by the **Hon'ble Lt. Governor, Puducherry, Dr. Kiran Bedi**.

5. The following panellists/Guest Speakers were invited to share their expertise and guidance during the Conference:

- (a) Shri Rajiv Jain, Director, Intelligence Bureau
- (b) Dr Avik Sarkar, Head – Data Analytics Cell, NITI Aayog
- (c) Shri Sanjoy Sharma, Chief of Products & Solutions, Tata Power SED
- (d) Shri Rajesh Mathur, Chair FICCI Committee on Geospatial technologies
- (e) Shri Snehil Dhall, Founder & Director Crimeophobia

- (f) Shri Rakesh Asthana, Special Director, CBI
- (g) Shri Anvesh Mangalam, Addl DGP, Madhya Pradesh Police
- (h) Shri Subodh Vardhan, Managing Director, Motorola Solutions India
- (I) Shri Alok Dixit, Founder Member, “Save your Voice” campaign
- (j) Shri Shishir Verma, Sr VP, MapmyIndia
- (k) Shri Alok Joshi, Chairman, NTRO
- (l) Shri Rajiv Aggarwal, Joint Secy, DIPP
- (m) Col HS Shankar (Retd), Chairman, FICCI Space Committee
- (n) Shri Vaibhav Gupta, Director, MKU
- (o) Shri Ashok Kanodia, MD, Precision Electronics
- (p) Shri Rajiv Gauba, Union Home Secretary
- (q) Shri Ashish Tiwari, Superintendent of Police, UP Police
- (r) Shri Harendra Kumar, SP, Rajasthan Police
- (s) Shri Veenu Bansal, Deputy Commissioner of Police, New Delhi
- (t) Shri Arif Shikh, SP, Chhattisgarh Police
- (u) Shri Amitabh Kant, CEO, NITI Aayog
- (v) Shri Vivek Bhardwaj, JS (PMO)
- (w) Shri Sanjay Sahay, ADGP, Karnataka Police
- (x) SHRI PSV Kishan, Founder & CEO, H-BOTS
- (y) Ms Sangeeta Das, Founder, Collaborative Intelligence India Ltd
- (z) Shri Anshu Gulati, Director, Security Shoppe
- (aa) Shri Vasvi Bharat Ram, Immediate Past President, FICCI
- (bb) Col Ajay Rajpurohit (retd), Executive Adviser, Vital Intelligence Group
- (cc) Shri Santosh Kumar, CEO & Founder, Group Cyber ID
- (dd) Shri Vibhu Anand, Director & Founder, Cyint

The following topics were covered in different sessions during the two-day conference:

Day 1

Inauguration

- Session 1 – Technologies for Predicting offenders, Predicting perpetrator identities & Predicting Crime Victims
- Session 2 – Safe Cities V. Smart Cities
- Session 3 – Public Procurement in Internal Security – Way ahead
- Session 4 – SPs Talk – by visionary Superintendents of Police

Day 2

- Session 5 – Predictive Policing and emerging Trends in Cyber Crime
- Session 6 – Next Generation Technologies for SMART policing
- Session 7 – Predicting Cyber Crime against Women: Is it possible?

Valediction

Inaugural Session

6. The introductory address to the conference was delivered by Shri VH Deshmukh, Additional Director General, BPR&D. Welcoming the gathering to the event, the ADG informed the audience that the event is the second edition of the endeavour to implement the Hon'ble PM's desire in the DsGP/IsGP Conference in December 2015. He added that the theme of the event is “Predictive Policing & Contemporary Challenges for Indian Police Forces”, with the Focus Areas being Predictive Policing/Crime Analytics/Big Data Analytics, Artificial Intelligence, Cyber Crime, Geospatial Technologies, Surveillance Tracking, Unmanned Aerial Vehicles (UAVs) and CCTV equipment. He added that as a special feature, this edition also includes a **Police Expo**, which is being co-hosted along with the Federation of Indian Chambers of Commerce and Industry (FICCI). Over 70 vendors involved in and dealing with the latest Police and crime technology have displayed the equipment in the Expo, which has been synced into the Conference for the first time.

7. Shri YK Modi, the Immediate past President of FICCI, the co-host of the Conference stated that the country's crime graph is on the upswing as a result of which the pressure on Police Forces has significantly been enhanced. He noted that Police reforms need to be implemented comprehensively as envisaged which would go a long way in relieving this pressure. Pointing out the technological advances leading to the burgeoning crime trends and newer technologically-intensive nature of crimes, he said that the need for the Police forces to stay abreast of such emerging technologies is the reason for the Police Exposition that has been organised along with the event.



8. Delivering the welcome address, Dr AP Maheswari, DG, BPR & D underlined the importance of the Police Forces to remain in the van of the rapid technological advances that have significantly changed the nature and trends of crimes and the acute need for law enforcement to harness these advancements. Pointing out the fact that CCTV has brought about considerable decreases in such crimes as booth-capturing during elections and traffic violations, he stated that “technology has changed integrity in people's lives”. He added that Technological footprints synced with Integrated Policing and Traffic Management has hugely contributed towards reduction in crimes. Artificial Intelligence, the DG observed, was the technology that has led to the discovery of a solution for detection of underground tunnels in the country's borders. This technology he went on to add, can also detect stress levels in the personnel deployed in key positions and thus can lead to optimisation of HR resources.

9. The DG reminded the young SPs present in the audience that they are the catalysts of change in the technological transformation overtaking the country. He said technology has vastly improved policing and it is being used to provide Citizen Centric Services, implement the Safe Cities & Smart Cities projects and Social Media Analytics.

10. The Union Home Minister Hon'ble Shri Rajnath Singh inaugurated the Conference. Whilst delivering the keynote address, he called upon the Police organisations to collaborate with reputed institutes such as the



IITs and IIMs for innovative solutions in technology and management. He said students from these institutes should be invited for internship every year so that constraints can be overcome and new technologies developed. “Based on your requirements, you can collaborate with various institutions for research and developing technological solutions and training,” said Shri Rajnath Singh. “If we make coordinated efforts and share among ourselves the various issues, problems, failures and success, we can improve our efficiency and effectiveness in managing law and order, border guarding, terrorism and extremism,” he added.

11. The Union Home Minister said adoption of technology will spur indigenous manufacturing and cut imports. “We are dependent on import of arms and other advanced equipments to a large extent. We can focus on indigenous manufacturing of such advanced technologies in collaboration with specialized institutes keeping in mind the special features we require. Thus we will develop in-house capacity and reduce dependency on imports,” said Shri Rajnath Singh. “We must make best use of the presently available technologies and think of out-of-the-box ideas to find problem based solutions,” he added.

12. The Union Home Minister said the Police Forces are saddled dealing with complex crimes and criminals armed with automatic weaponry. “We should focus on monitoring and analysis of crimes and develop such methodologies and techniques that crime can be nipped in the bud. “Many agencies and organisations are trying to develop crime data analytics software. This will result in Predictive policing, which will not only help check crimes but also keep tab on terrorist activities and Naxal attacks. BPR&D has shared a project study report on 'Establishing Social Media Labs and collection of intelligence from the social media' with the State Police Forces,” said Shri Rajnath Singh.



13. The Union Home Minister said we are making effective use of technology to secure our vast coastline. “We have a multi-dimensional arrangement comprising the Navy, Coast Guard and Marine Police Forces for coastal security. Under the Coastal Security Scheme initiated by the MHA in 2005-06, fishing boats and trawlers have been equipped with Radio Frequency Detection System and GPS based techniques. BPR&D is providing training component to the National Academy of Coastal Policing, where coastal policing standards are at par with the best in the world,” said Shri Rajnath Singh.

14. The Union Home Minister said the Government is committed to pursuing the Police Modernization programme vigorously. “We have provided the Police Forces with the modern SX-95 and Brreta weapons. To deal with crowd management and public outrage, Police Forces need to use an array of lethal and non-lethal weapons. BPR&D has undertaken a research project on the development and testing of lethal and non-lethal weapons,” he said. “Drones or UAVs have emerged as a useful new technology in policing. Ministry of Civil Aviation has constituted a Task Force in which BPR&D is a key participant, to prepare a roadmap for application of UAVs,” he added.

15. Shri Rajnath Singh said technology is also altering the crime investigation procedures. “The cabinet recently gave its approval to a bill that would make DNA finger printing as valid evidence. Rape detection kits are being provided in every district. Cyber Forensic Cell is also being strengthened. Police Forces are being encouraged to develop mobile apps to provide various services to the citizens,” he said.

16. Speaking on the occasion, Director, Intelligence Bureau, Shri Rajiv Jain said the Government's resolve towards Police Modernization is evident from the fact that the Prime Minister Shri Narendra Modi has made it a point to spend two-to-three days with the Police Officers during the annual DGPs Conference.

17. The Home Minister released a research report compiled by BPR & D on “Predictive Policing” after which, Shri Rahul Chaudhary, Chair, FICCI Homeland Security Committee proposed the Vote of thanks on completion of the Inaugural Session of the Conference.



Day 1 (July 26, 2018; Thursday)

Session 1: 1200 – 1300 hrs (Technologies for Predicting Offenders, Predicting Perpetrator Identities & Predicting Crime Victims)

18. The session was chaired by **Dr. Avik Sarkar, Head – Data Analytics Cell, NITI Aayog, Govt. of India**. He stressed the importance of technology and data analytics towards facilitating effective policing. Taking the cue from several data based modelling and used cases, he mentioned that we could implement predictive policing. This can be used in the predictive policing and surveillance can be done in the real time. The drone policy in India is still at the evolutionary phase unlike other developed countries. CCTV also presents enormous opportunity for effective policing. Our effort should be to be able to do pro-active policing than post-facto investigation of the incident. A point cropped up from the audience that CCTV images should be very clear so that it helps in investigation of the case. He also mentioned that using the GIS data crime hotspots can be analyzed and policing efforts could be channelized to those geographical areas accordingly. The biggest challenge is to incorporate rapidly changing technologies in policing.

19. **Shri Akshay Singhal, Partner, Advisory Services EY**, then resumed the session. He started with day-to-day examples of predictive policing and mentioned that in some ways we all are doing activities akin to predictive policing. While planning the policing activities historical background is also to be kept in mind. Crime pattern is to be examined in relation to time, sowing session and festivals. The idea is to see the behavior pattern and then to predict the future. He stressed the point of adopting predictive policing towards bringing the crime rate down citing various examples pertaining to foreign countries. He also mentioned that developing countries are to gain much more from predictive policing than developed countries. Predictive policing involves two parts i.e. Prediction of crime and criminals with the prediction of time and place. He further mentioned that HUMINT is important but it has to be backed up with technology.





20. Subsequently, **Shri Sanjoy Sharma, Chief (Products & Solutions), TATA Power SED** addressed the gathering. He stressed that in India data flows in a very heterogeneous form. There are so many types of languages and dialects, therefore, it becomes rather important that while developing any solutions users view point should be incorporated. He mentioned that his company has found that video analytics is the need of the hour. It is very important that instead of prevailing technologies, it is the user requirement that should control the application development. He also brought out an interesting fact that the more data is fed to the AI systems, more accurate the analysis is going to be. He also brought out an interesting fact that the more data is fed to the AI systems, more accurate the analysis is going to be. Now Analytics including video systems are there which can analyse vast amount of data after identifying the **key words**. He stressed the point of co-developing with active collaboration of actual users. Lastly, he mentioned that home grown systems should be given equal importance as to the imported ones, if not more.

21. **Criminologist Shri Snehil Dhall, Founder & Director, Crimeophobia** mentioned that for cracking transnational organized crime makes it very important that we have to get into the minds of the criminal, their behaviour, exact nature of activities they are doing and its social effects . He also talked about crime data, jail records, criminal behaviour, crime and its social impact is important. There are criminal offences that are still not defined in law. He emphasized that it is important to understand the psychology of the case and then work towards the evidence and witness part of it. Understanding the psychology of terrorism will help us the catch the mastermind. His system can hunt down the master mind as well as the implementers of the crime. Always there are gap areas of criminal activities which has still not been covered under illegal activity by the law of the land. Criminals exploit this gap area. He mentioned that his solutions can take care of these.





22. **Shri Radhakrishna B, Director, Director - Risk & Fraud Management Practice, SAS India** mentioned that they are primarily data scientist. Presently we have explosion of information. The volume and variety information maze at times gives us the feeling of getting lost. This makes fast analyzing power and predictive policing very important. Information discovery demands that data should be there in the structured format. The social media messages are to be examined critically that from where they are emanating. Data repository has to be created, which can help in not only detection of crime but prevention of crime as well.

23. **Shri Rajesh Mathur Chair, FICCI Committee on Geospatial Technologies, and Advisor, ESRI India** mentioned that his company has found that FICCI is involved in the Geo special technologies. GIS provides contents as well as context in temporal dimensions. This makes it very useful in taking informed decisions. It creates an integrated and holistic platform. Hotspots, frequency can be identified very easily. Pattern leads to prediction. GIS also helps during exigencies and emergencies.

Session – II: 1400 – 1500 hrs
(Safe Cities V/s Smart Cities)

24. Smart city and Safe city are two terms that have been typically confused or transposed in use. Whilst Safe City projects focus on improving the safety of citizens, Smart cities on the other hand, tend to have different prime movers and enablers. Improved public transportation and intelligent infrastructure are amongst key components.

25. The Session was chaired by Shri Rakesh Asthana, Special Director, Central Bureau of Investigation (CBI), and the lead speaker was Shri Anvesh Manglam, Additional Director General, Madhya Pradesh Police. The distinguished panellists included Shri Subodh Vardhan, Managing Director, Motorola





Solutions, Ms. Ritu Saini, Acid Attack Survivor & Campaigner 'Stop Acid Attack' and Shri Shishir Verma, Sr. Vice President, MapmyIndia.

26. The lead speaker explained that whilst Safety is the most important aspect in the Policing, installation of CCTV, Centralized Command and Control Centre and Integrated Traffic Management System constitute elements which need to be incorporated whilst developing Smart Cities to ensure the safety and security to their citizens.



27. Other speakers pointed out the need for dedicated and seamless connectivity between data sensors and the Central Command centre, security of the networks set up for the purpose to ensure the operational functioning of the concept.

28. Ms. Ritu Saini – an unfortunate victim of an acid attack recounted her sorrowful experience and pain she felt. She pointed out that external smartness or beauty such as Smart buildings, Smart phones etc are totally inconsequential until and unless holistic efforts are invested in bringing about transformation of individual minds and mental conditioning. She added that cities will be smart in real sense only as and when this is achieved.

Session – III: 1500-1600 hrs
(Public Procurement in Internal Security – Way Ahead)

29. The session was chaired by Shri Alok Joshi, Chairman, NTRO. He led off by explaining that procurement of equipment for LEAs, is a complex task as it involves obtaining products essential to the organisation, with the best technology, which are proven and reliable, whilst adhering to and navigating through the myriad of procurement relations and standards laid down.

30. Shri Kanodia underlined the need to stick to the promulgated timelines in the process, which he said, provides motivation and encouragement to the vendors to submit their best equipment, whilst also discouraging them from indulging in any malpractice. This assumes critical importance when seen against the canvas of rapidly evolving technologies and scientific processes; as a result, if procedures are lengthy, cumbersome and difficult to confirm to, equipment that is finally procured would have lost its value and need for the organisation. He went on to add that indigenous manufacture is feasible and practical, but tht it requires firm commitment, gestation period and support from the Government to the manufacturers.

31. A new public procurement policy 2.0 is the need of the hour, stated Shri Vaibhav Gupta. The Policy must allocate resources and assistance for Research and Development for Indigenous manufacturing, he added. He explained that licensing requirements may be stringent in respect of lethal technology, weapons and armament, whilst being flexible and enabling in others.

32. Col Shankar pointed out that the central and state Governmental procurement policies are not harmonised and tended to be considerably different from one another. Assured and firm orders for products





and equipment from CAFs would be a powerful motivator for MSMEs to build capability in the remote areas of the North East and Chattisgagh.

33. All panellists were unanimously of the view the procurement procedure being followed in government sector is quite lengthy and cumbersome which needs revision.

34. In spite of good quality and latest products useful to police, tedious process and complex qualitative requirement of products become hindrance to industry. They also stressed while evaluating the products,

Government officials should focus on the selection of products rather than rejection. Speakers also desired that indigenous products should be given bias for the encouragement to develop the technologies. In addition, the chair emphasise that the administrative leadership should also use their power judiciously.

Session IV – 1630- 1730 hrs
(Predictive Policing and Emerging Trends in Cyber Crime)

35. “Data is at the Centre of the Universe” opined Shri Sanjay Sahay, ADG Karnataka Police; He said “Data creates ease and value”, whilst explaining that big data will here on transform the manner of how people live, think and work. In times to come in the not too distant futre, 98% of data would be digital and Police Forces across the country would need to adopt, adapt and develop expertise in handling big data, he added.

36. The chair pointed out that admissibility of digital evidence was the biggest challenge for LEAs across the world. He explained that big data was at the base of counter terrorism operations such as 9/11, New York and 26/11, Mumbai. He recalled that in 2011, Time Magazine identified Predictive policing as one of the 50 best new inventions of that year.



37. He envisaged that the young officers must maintain pace with emerging and rapidly evolving technologies; failure to do so would seriously constrain and handicap our law enforcement agencies will not be able to tackle newer trends in crime. He also stressed upon that the other sectors are embracing the new technologies extensively but Police forces are lagging behind on this aspect. He further explained various new types of cyber-crimes and future policing areas in cyber world. He said “getting hacked is the normal of the world”; adding that the best adopters of new technology are the cyber criminals who are now employing cutting edge technologies such as the Onion router, Block-chain, Zero Day and Dark Net. As a result, hacking has transformed from being obtaining an edge to becoming a commercial enterprise with ransom ware being identified as the critical tool.

38. He also highlighted that there are certain agencies like Predpol and Palantis which have developed software for Police for detecting and predicting crime. Machine learning, artificial intelligence and deep learning are the directions and areas in which police forces and LEAs must inexplicably develop specialist skills. Although it is just the beginning and when the technology would mature in a day to come, the job of law enforcement agencies would be more challenging. Privacy and racial profiling shall also be a major challenge for Police forces. He singled out an interesting feature by saying that no specialist tools need to be procured for developing competencies in these areas as all the requisite resources are already available in the Internet.

Day 2 (July 27, 2018; Friday)

Session V – 1600 – 1700 hrs (SP-Talk – by visionary Superintendent of Police)

39. The session was chaired by Shri Pawan Srivastava, with Shri Venu Bansal, DCP, Delhi Police leading off by describing the initiatives “**Nirbheek**” wherein various technologies and mechanisms are being used for ensuring child safety against sexual abuse. Another speaker from BSF, Shri Hemant Jha, Commandant discussed the case study of BSF in which various technologies like geospatial, hotspot analysis, digital mapping etc. have been integrated. Based on the integration of these technologies, the force is in position to get the fair inputs on crime patterns and predict the probable chances of crime likely to occur in specific area - tunnel detection.





Session VI – 1030-1130 hrs
(Next Generation Technologies for SMART Policing)

40. The session was chaired by Shri Vivek Bhardwaj, JS (PM), MHA. The chair commenced by defining the world *SMART*. S- Sensible, M-Modern, A-Accountable, R-Responsive and T-Technology. He underscored for the need for Police to be considered as one of the services such hospital, education etc. The *Thana* level is the cutting edge service provider, hence, there is a need to make our *Thanas* smart to ensure Smart Policing in real sense.





41. Ms Sangeeta Das, one of the panellists explained that Smart Policing essentially encompasses four areas – Data Analytics, Training, Artificial Intelligence and Robotics deployment. Involved technologies include Robotics, Facial Recognition and Tracking Solutions.

42. Shri Gulati spoke on specific technological equipment such as the Remotely Operated Vehicle (ROV), Through-wall Radar, Ground-penetrating Radar, RF detector, Frequency Domain Reflectometer (FDR), Contraband Detector, etc. Shri Anshu Arora dwelled on technology in Smart Cities and support services particularly connectivity devices and data processing technologies.

43. The session focussed on various approaches to develop technology and solutions to meets its internal security challenges – especially to address the requirements of CAPFs and State Police Forces. Homeland

Security has distinct requirements in terms of complexities and challenges as the threats arise on account of various factors such as social structures and inherent inequities; therefore, a different approach would be essential.

Session VII – 1130-1215 hrs
(Predicting cyber Crime against Women; Is it Possible?)

44. The session was chaired by Ms. Vasvi Bharat Ram, Immediate Past President, FICCI –FLO and joint Vice Chairperson, Shri Ram School. She opened the session by recounting a brief history of the development of computers and Internet over the last two decades. She identified Digital Technology as the key enabler of services and governance in today's world by paving the way for effective service delivery. She also said it has enabled the development of a “flatter” world. Crime prediction is the latest emerging concept for Law Enforcement Agencies (LEAs); and the available technology for its implementation is so new that just a handful of LEAs around the world presently use it.

The Chairperson also pointed to the emergence of cyber crime by tech-savvy hackers through social media particularly by human traffickers luring women.

45. Col Raj Purohit briefly re-traced the origins of basic connectivity in India and its development in today's world, where the mobile phone platforms have become common place. He stated that women and children have become the most vulnerable segment of cyber crime perpetrators. He pointed to three major areas of action for protection of this category: cyber education and hygiene, cyber security and Technology tools.





46. Shri Santosh Kumar indicated online matrimonial platforms, child pornography and whatsapp as major sources of cyber crime against women and children. He requested BPR & D to create specified groups to target these crimes and develop solutions for immediate action.

47. Shri Vibhu Anand, the third panellist however, differed with the other two speakers. He opined that predicting cyber crime against women is not particularly feasible. He recommended fostering an environment which encourages victims to report such instances and for LEA officers to initiate action.

48. The panel was of the view that cyber education and awareness as precautions for women and children to combat cyber crime against this category.

Emerging Challenges

49. Emerging Challenges which Predictive Policing will throw up –

- a) Drawing up of state of art specifications in tune with emerging technology
- b) Predictive Policing being highly data driven, ensure integrity of the data develop modern tools from Police personnel to analyse the same.
- c) Privacy - To ensure that evidence gathered is not in violation of the rights of individuals.
- d) Profiling on grounds of race, castes etc. – Policy makers need to have laws to safeguard the same.
- e) Analysis of social media in predicting crimes particularly against women and children

Valedictory Session (1230-1330 hrs)

50. The valedictory session of the Conference commenced with the Additional Director General, BPR&D, Shri VH Deshmukh presenting an overview of the two-day conference and the technological exposition, Police Expo-2018, organised in collaboration with FICCI. He said that about 65 firms dealing in security related state-of-the-art technology firms participated in the event. Shri Deshmukh said the Young SPs Conference was introduced at the behest of the Prime Minister Shri Narendra Modi who had directed during the Annual Conference of Directors General and Inspectors General of Police held at Bhuj in 2015 that the young police officers should be trained and made familiar with the latest technology.

51. The ADG related that the first Young SPs Conference was held in 2017 and this was the second such event. This time the conference was inaugurated by the Union Home Minister. In his keynote address to the conference, Shri Rajnath Singh had said that police face a myriad of challenges spreading from mainland to



coastline and the nature of the crime which policemen tackle nowadays has become complex. He had called for better coordination between different entities with optimum use of technology which he had said, can ensure better security. This is why exposure of young police officers to emerging technologies and interface with domain experts is very important, he said.

52. In her valedictory address to the conference, Lieutenant Governor of Puducherry, Dr Kiran Bedi guided the young police officers to always remain true to the spirit of serving the police force since it concerns the safety of life, liberty and well-being of every citizen. She advised them to always act according to the letter and spirit of law without waiting for orders from their superiors.

53. She explained that the Superintendents of Police shoulder a great responsibility as they are the leaders on the ground while senior officers play supervisory role. She exhorted them to start their day early in the morning and follow a strict daily regimen of going to the field and meeting with the people.



54. Dr. Kiran Bedi, Hon'ble Lt. Governor of Puducherry, complimented BPR&D for bringing together young police officers and technologically advanced companies dealing in security equipment besides the experts in this field. She recalled her days with BPR&D as its chief and expressed satisfaction over its growth in the following years. About the two-day conference of young SPs, she said that this should be made mandatory for every SP instead of limiting it to only 100 of them. She further suggested that BPR&D should start one-time training for the benefit of the entire police force on relevant subjects by use of appropriate technology.

55. Director-General, BPR&D, Dr AP Maheshwari hailed Dr Bedi as a symbol of women's empowerment besides being a Magsaysay Award winner and an extraordinary police officer. At the end of the two-day conference, Dr Maheshwari had a word of caution regarding the use of technology so that it serves its intended purpose of public good. He cited the example of the farm sector where after indiscriminate use of chemical fertilizers, farmers are being encouraged to return to organic farming. Dr Maheshwari said that an institution like the BPR&D should be set up at the State-level to meet the growing needs of the State Police Forces and train the police personnel as per the local needs and conditions.

56. The conference and the Police Expo concluded today with the Vote of Thanks by Shri Dilip Chenoy, Secretary-General, FICCI.

PRESENTATIONS



Predictive Policing an overview...

Impact of predictive policing across the globe...

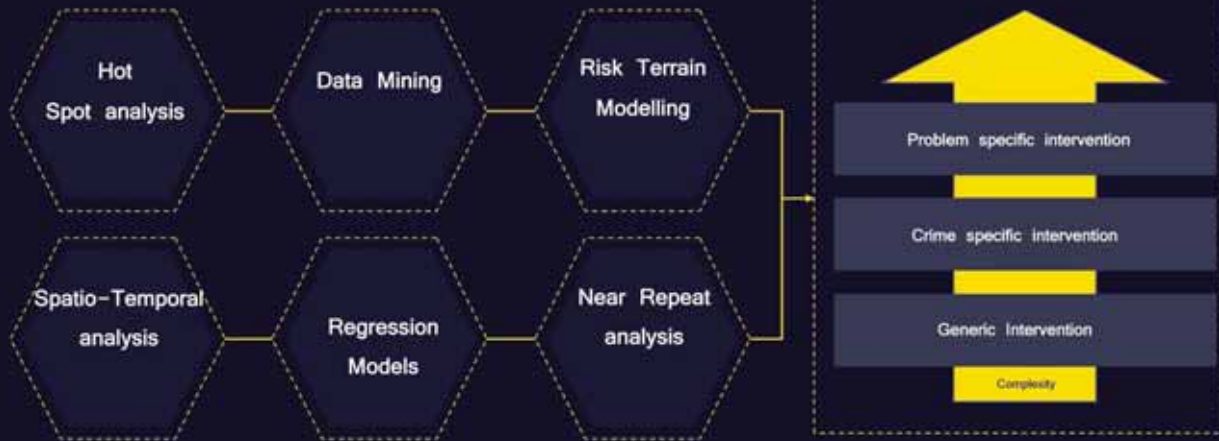


Predictive Policing an overview...



Predictive Policing Technologies an overview...

Key technologies aiding Predictive Policing



Agencies across the globe are using specialized tools for predicting crime...

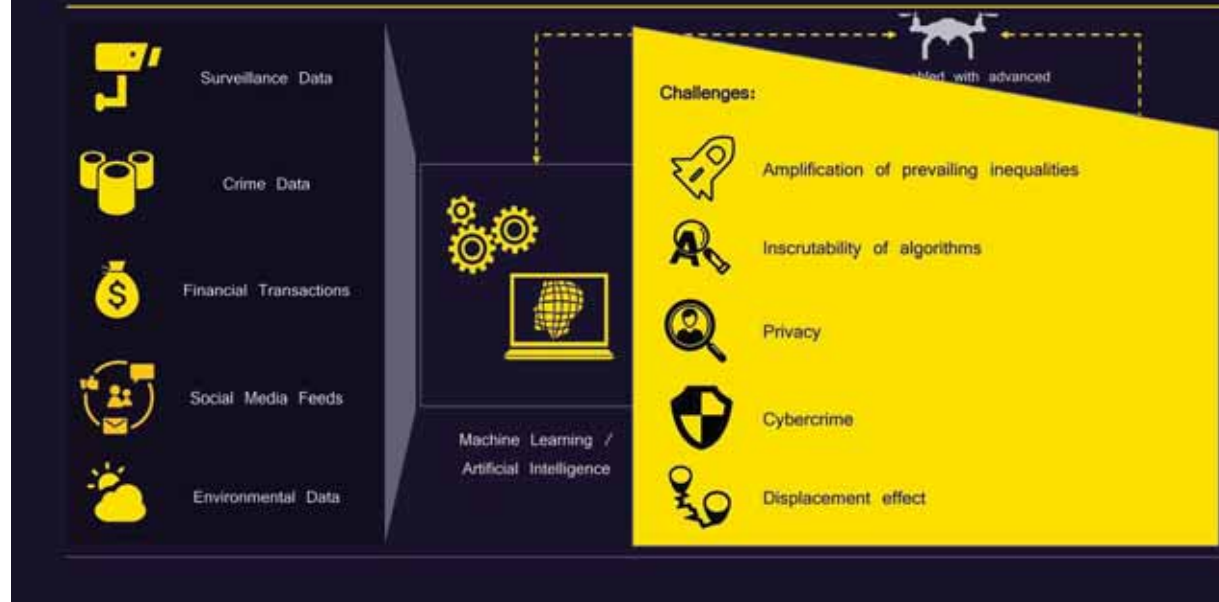
 Case Study : Manchester, NH Police Department



India's attempts at transforming large volumes of data into actionable information...



Challenges faced while envisaging policing based on predictive analysis...



Footsteps towards a better future...

Predictive policing begins with law enforcement agencies understanding the data and goal of the analysis.

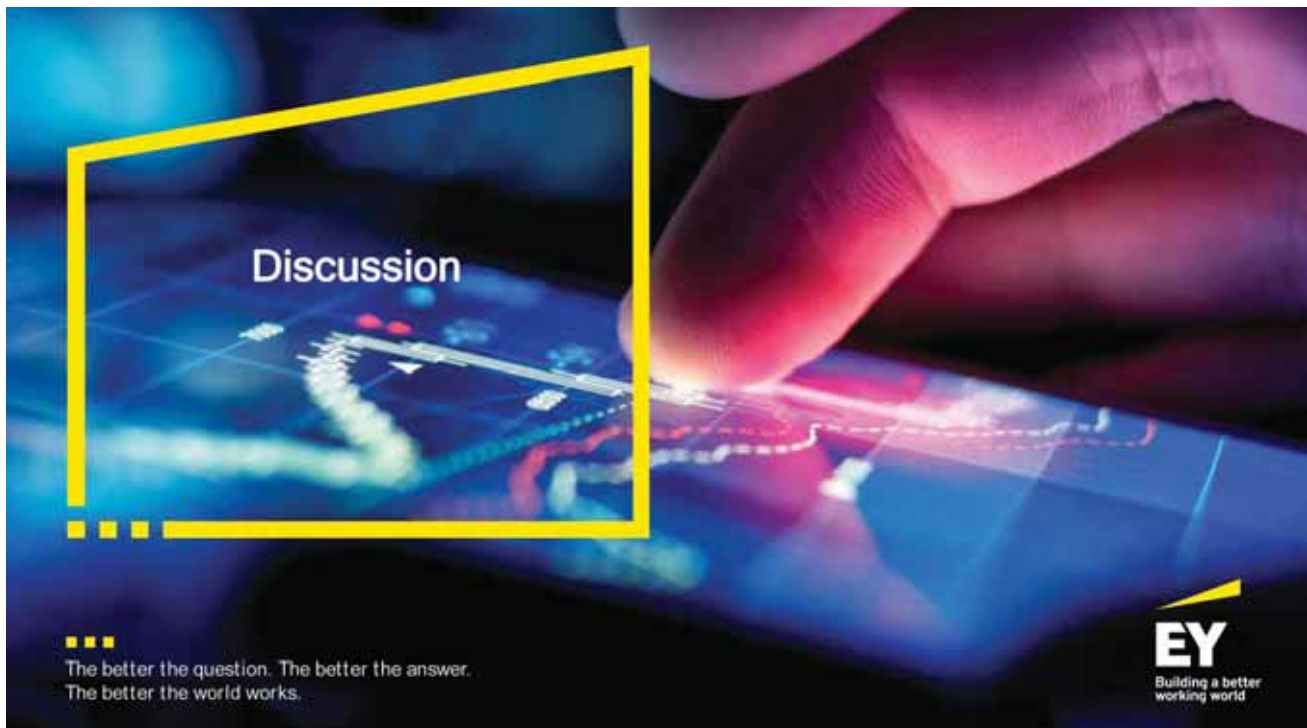
Analyze the predictive policing applications across multi-faceted procedures prevalent in the criminal justice system.

Data collection, retention and use and explain to the public how data is being used to enhance public safety.



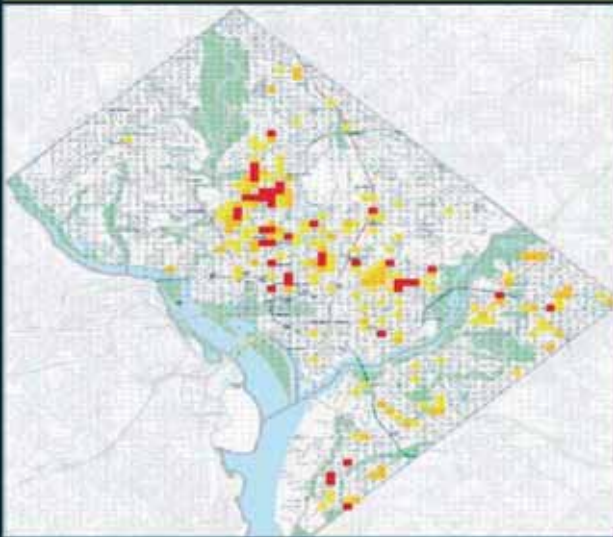
Finalize the analytic category and primary application like Hot-Spot, Regression, Data Mining, Near-Repeat, Spatio-temporal etc. as per the specific policing needs.

Identifying the correct cases/ data through digital trails, prisoner digitized records, UAV technology, sensors etc.



Predictive policing technologies

Hot-Spot analysis



Grid map of robberies in Washington, D.C.

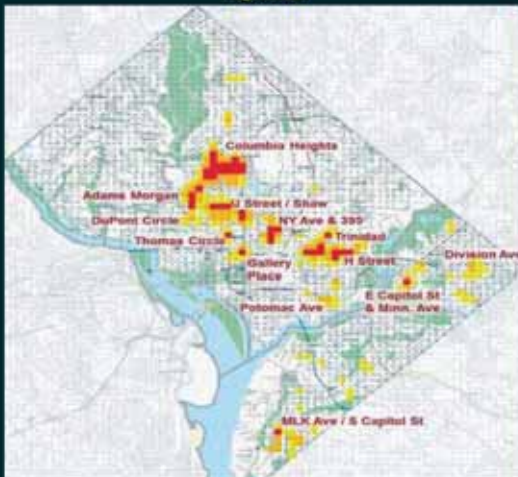
- Red Squares - Top 2 percent for robbery counts (99th-98th percentile)
- Orange squares - Top 5 percent (97th-95th percentile)
- Yellow squares - Top 5 percent (94th-90th percentile)
- Each cell is 250 meters long

Source: Preliminary findings from an RTI International, Structured Decisions Corporation, and RAND project funded by NJ's Office of Science and Technology (OST)

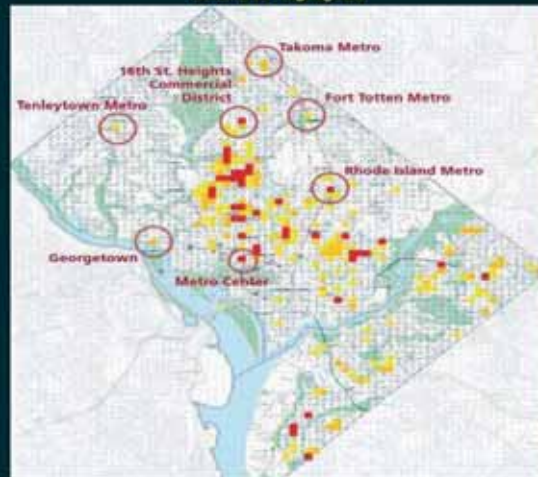
Predictive policing technologies

Data mining & Regression Models

Robberies in Washington, D.C. by Multiple Regression

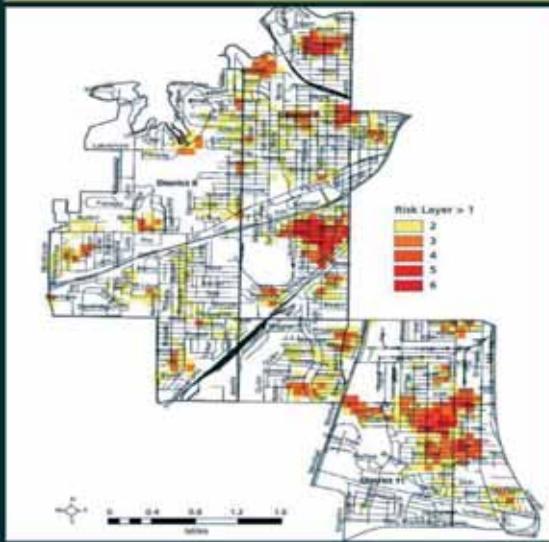


Robberies in Washington, D.C. with High-Risk landmarks highlighted



Source: Preliminary findings from an RTI International, Structured Decisions Corporation, and RAND project funded by NJ's Office of Science and Technology (OST)

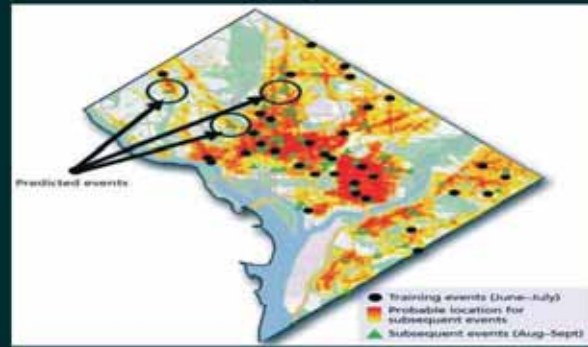
Predictive policing technologies
Risk Terrain modelling (RTM)



RTM Output for Shreveport, Louisiana

Separate map layers representing the spatial influence and intensity of a crime risk factor is created in a geographic information system (GIS)

RTM for predicting Purse Snatching Risk



Source: Susan Reno, Police System Administrator, Shreveport Police Department, PILOT: Predictive Intelligence Led Operational Targeting, presentation at the National Institute of Justice Conference, Arlington, Va., June 19, 2012

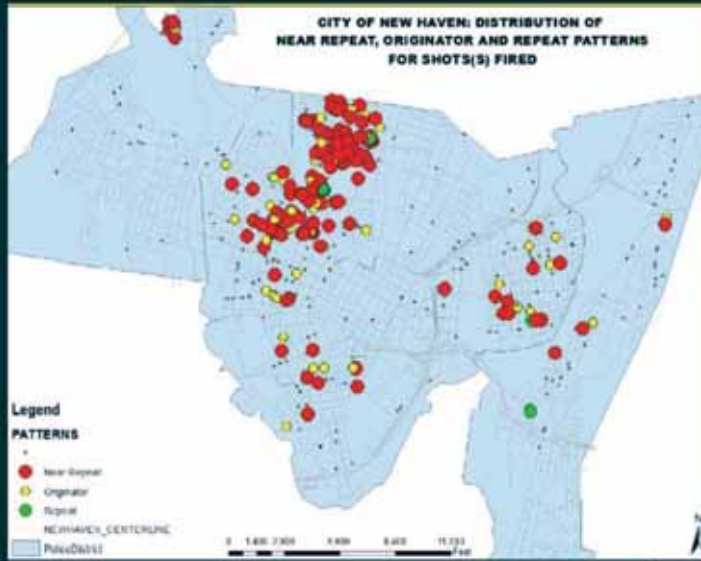
Predictive policing technologies
Spatio-Temporal analysis

Hour	Six Part 1 Crimes						Burglaries						Robberies								
	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat
12:00 a.m.	626	483	484	421	480	548	674	45	40	37	38	37	38	57	132	83	86	86	83	88	149
1:00	634	294	298	278	287	321	677	41	38	32	33	32	27	34	132	88	78	55	59	82	152
2:00	534	225	212	302	291	243	535	30	27	34	28	33	25	34	144	42	50	38	55	45	141
3:00	477	188	148	133	141	122	472	26	26	26	28	22	31	31	156	29	34	25	27	49	158
4:00	234	182	194	186	141	188	317	33	31	31	30	28	43	38	86	27	26	30	29	24	89
5:00	196	180	194	181	184	192	198	13	17	18	18	18	18	14	29	23	17	19	18	22	26
6:00	140	240	241	208	220	210	214	18	10	47	35	47	49	28	23	25	21	17	29	21	32
7:00	275	612	602	574	612	600	342	35	179	172	188	187	147	44	23	28	28	24	18	27	35
8:00	182	390	358	388	402	393	192	38	126	91	91	88	96	78	23	22	18	27	29	17	21
9:00	313	608	558	540	524	547	385	35	199	119	111	113	113	43	12	17	31	30	18	31	28
10:00	413	486	483	424	482	480	434	28	78	83	91	72	79	44	28	36	40	28	51	27	28
11:00	424	485	483	473	475	488	483	35	88	81	69	81	79	53	38	44	33	43	46	55	36
12:00 p.m.	602	603	614	600	587	658	593	48	90	77	85	88	79	63	52	47	47	46	41	46	42
1:00	455	530	488	468	530	534	508	48	38	56	52	57	50	47	48	57	58	50	55	52	60
2:00	567	587	523	560	503	611	622	52	70	47	68	54	84	38	48	54	53	64	38	38	61
3:00	603	556	589	606	582	569	673	52	84	86	60	58	85	82	58	68	78	74	83	80	84
4:00	582	607	621	669	559	744	654	46	57	57	63	55	84	75	45	81	83	90	62	79	44
5:00	599	740	634	668	649	689	657	46	82	75	82	80	126	62	58	86	56	78	78	74	55
6:00	640	601	753	767	754	832	723	48	51	52	67	77	103	72	59	86	89	88	68	87	86
7:00	657	790	791	754	754	821	719	38	61	59	64	57	74	53	80	85	64	81	72	82	83
8:00	691	798	710	728	703	822	721	27	54	43	47	46	55	49	38	112	97	105	81	116	84
9:00	685	758	741	676	687	908	816	41	52	54	44	41	52	44	120	146	127	120	96	146	125
10:00	706	678	678	717	721	840	824	37	47	52	48	33	44	53	113	116	124	103	128	144	147
11:00	600	608	580	625	688	849	846	42	50	35	52	43	58	43	107	118	102	113	108	148	132

Heat-map of Part 1 Crimes, Burglaries & Robberies in D.C.

- Used to identify when a crime is most likely to occur
- Also identifies victims as they account for the ambient population, as well as local residents
- Simplest form of STA is Heat-map analysis
- Shows through colour intensity, the relative frequencies of crimes with different dates, times, and conditions

Source: Preliminary findings from an RTI International, Structured Decisions Corporation, and RAND project funded by NIJ's Office of Science and Technology (OST)



Repeat and Near Repeat analysis

- Based on the simple proposition that future crimes are likely to occur near current crimes and geospatial methods highlight crime spots graphically
- Used to identify repeat and near repeat victimization patterns of a particular crime type within a specified time frame and geographic area
- As patterns are identified, prediction zones can be created and used for crime mitigation activities

Source: <https://crimemapping.info/articles/investigating-applicability-near-repeat-spatio-temporal-phenomenon-shots-fired-incidents-city-level-analysis/>



Technologies for Predicting Offenders, Predicting Perpetrator Identities & Predicting Crime Victims

Radha Krishna B



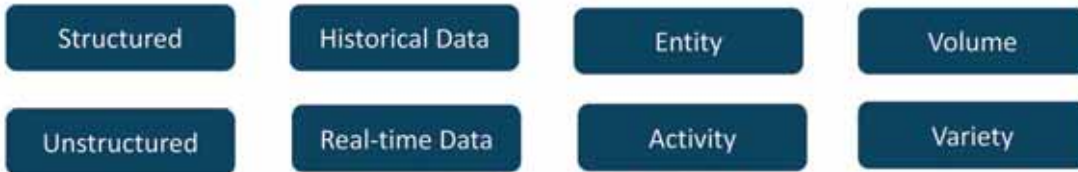
Key Issues

Police and Law Enforcement

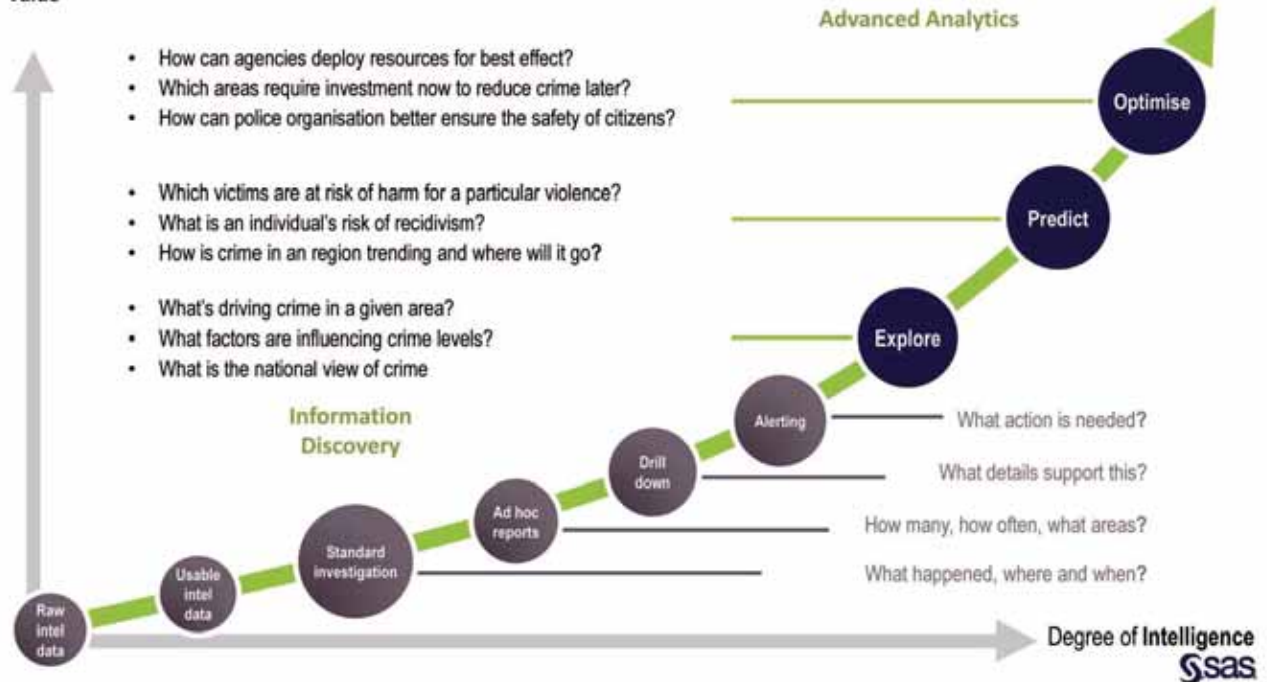
- Growing available information – Growing public expectations
- Political imperative for action
- Calamitous implications of failure – Need to evidence decision making process
- Drive toward "Intelligence led"; formalising procedures and disciplines (change!)
- Re-calibration to encompass prevention / deterrence beside detection



Data Universe



Value



The Enterprise Approach

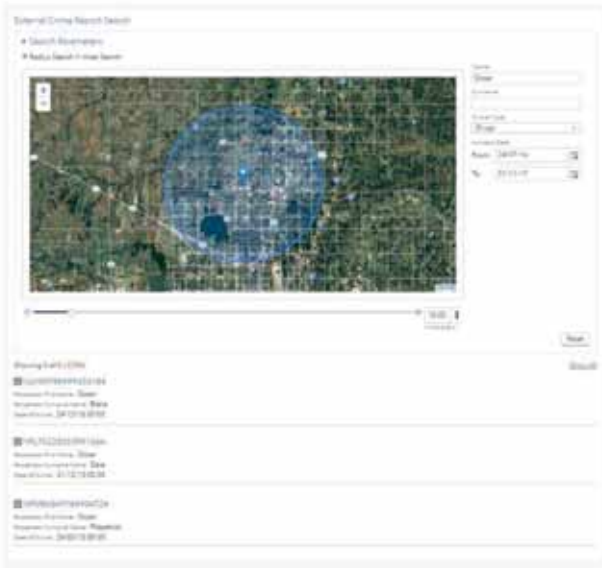


The Enterprise Approach

- Information Discovery



Consolidated Search



A Police Officer would want to:

- View crimes of a particular type that have occurred in a particular area over a particular time period.
- Run a search against information present on the current record against other records on the system to identify similarities.
- Identify there is a similar record that is of interest to his investigation. For e.g. a similar crime type that was nearby and within a few days of the record he is viewing.



Consolidated Search Single Person Record



A 'Single Person Record shows all information relevant to a person either:
Within the Person Record
Or Linked to it

Consolidated Search



Any smart product can be used through 'Mobile Investigator' app

- Search
- Submit reports
- Receive tasks

The Enterprise Approach

- Advanced Analytics



Entity Extraction

Entities are extracted from free text. Advanced algorithms determine themes in unstructured data which can then be clustered.



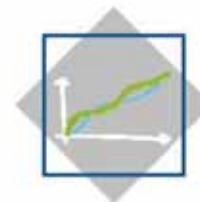
Social Network Analysis

Entities across data sources will be resolved, providing a holistic view of connections between contributing agency data.



Machine Learning

Machine learning algorithms can be deployed to risk score individuals, locations and events, contributing to the alerting framework.



Forecasting

Forecasting models to assist with tasking. Analytics enables strategic intel practitioners to interpret underlying factors driving trends.



Entity Extraction

Analysis

The suspect was seen distributing drugs on Fuchsia Avenue in Glasgow. The suspect is considered to have sold Mr. Seth Poole an undisclosed amount of an illicit substance. Mr. Seth Poole was questioned at a later date and she confused that she had bought Magic mushrooms from the suspect. Mr. Seth Poole provided the following phone number 389-117-0374 and email Forrest@lelifend.net for the suspect. Additional investigation is required to verify this information. [Here is more info](#).

Label	Type	Count
389-117-0374	Phone number	1
Fuchsia Avenue	Address	1
Mr. Seth Poole	Person	1

- An Entity Extraction module to enable Analysts to automatically mark-up unstructured free text to identify the most pertinent pieces of information.
- A module that allows all related records to be created and linked.

sas



sas

NAMMED PLACES DETECTION

Geolocation from semantic elements

A multitude of metadata associated with a semantic content analysis can enrich the data.



Localisation from metadata
Detection capability of any technical geolocation format.



Localisation from content
Integration of words to infer a position.



Localisation from attachments
Taking into account both content and container.

DETECTION OF INFLUENTIALS AND PROPAGANDA



Legende du nœud
● Influenceur
● Tweet

Outils Inspecteur d'objets

Information du Profil

 Nom d'utilisateur: CapotMalgan
 Nombre de followers: 4355
 Date de création du compte: 2012-11-22T19:16:11.000Z

Subjects of Profile

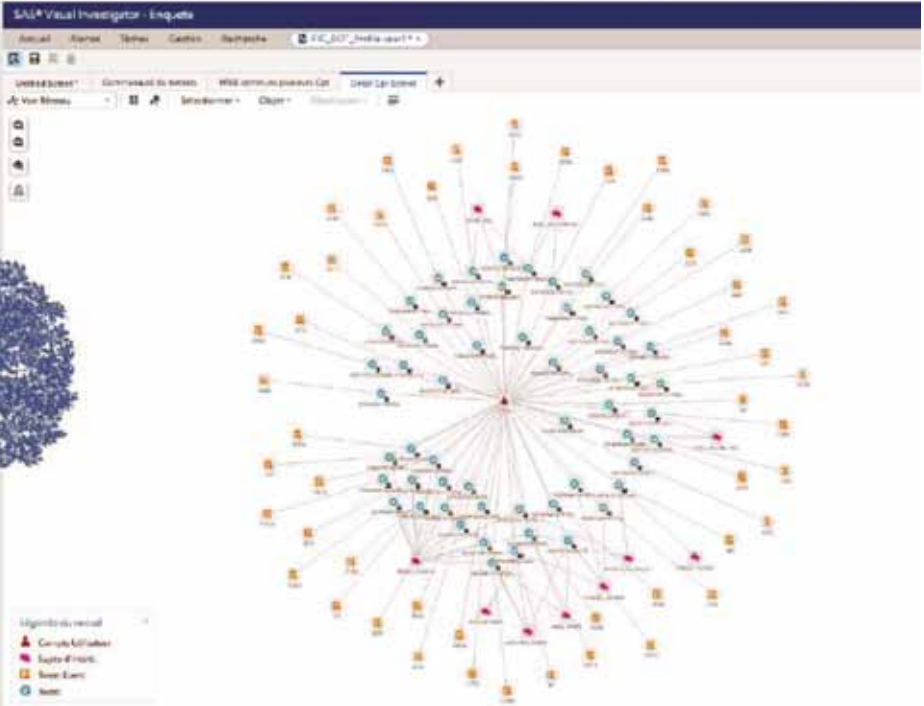
Name
MECCA

Tweets (109)

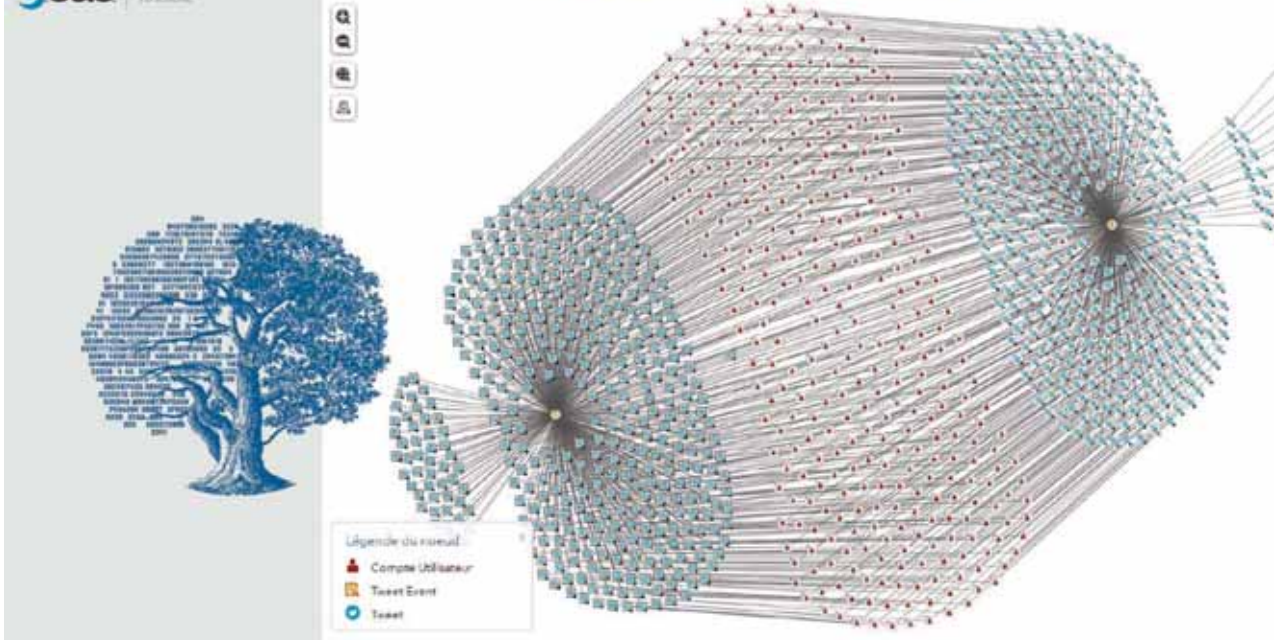
body

- #CapotMalgan message: 1) #CapotMalgan y a fini
- #CapotMalgan Pigeonnes Comptabil: MJC Bonjou
- #CapotMalgan Pigeonnes message DA: salu

SUBJECTS OF INTEREST DETECTION



TROLLS AND BOTS DETECTION



Benefits of Enterprise Analytics



SAS Overview



World's largest privately held software company



+11K
Employees



- ✓ Training Centers in India
- ✓ R&D Center in Pune

+50K
Installations & Clients



+300
Customers in India



Ranked World's 2nd Best
Multinational Workplaces 2015

41 YRS
sas | THE POWER TO KNOW.

Experience Focused on
'Business Analytics'

*significantly higher than the average investment of large software companies to support new development



Leveraging Geospatial Technologies for Smart Policing

Rajesh C Mathur
Advisor

ESRI India Technologies Ltd.
&

Chair

FICCI Committee on Geospatial Technologies

The Geographic Approach in Law Enforcement Changes the Way We See and Do Things



Providing Complete Operational Awareness

Whether Front Line Personnel Are....



Managing Traffic



Managing a Disaster Scene



Viewing Data on a Mobile Device



Developing an Operations Plan

Comprehensive System For Storing And Managing Information

Web GIS Provides an Integration Framework

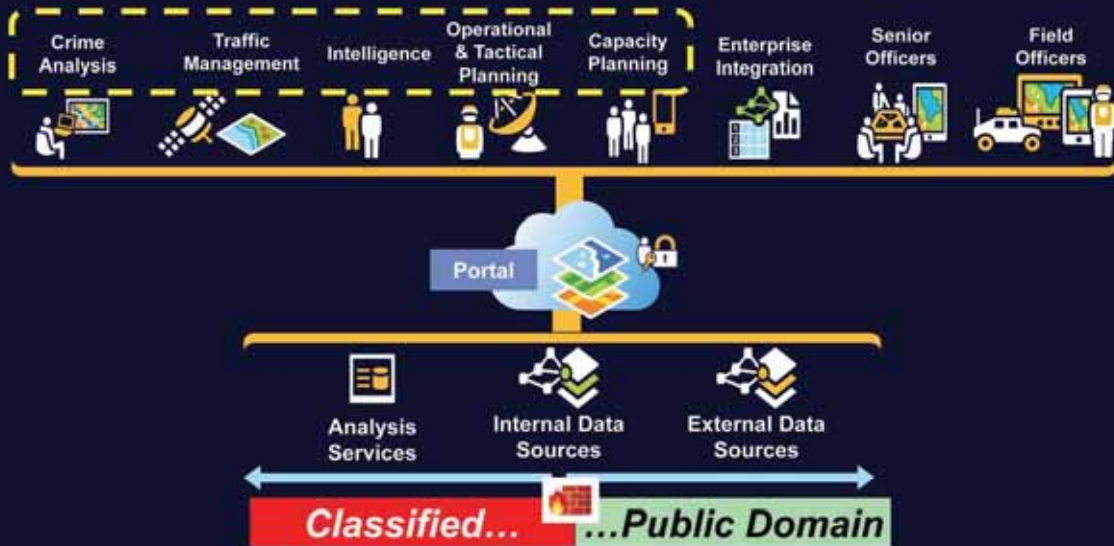


A Multi-Intelligence Platform



Both Internally and on the Open Web

ArcGIS Enables Integrated Intelligence



GIS Applications for Internal Security

- Crime Analysis
- Develop Actionable Intelligence
- Hotspot Analysis
- Predictive Policing
- Resource Management
- Emergency Response



GIS Provides Analytical Capabilities

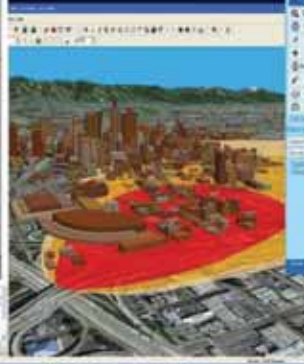


Tools And Capabilities To Improve Your Awareness And Decision Making...

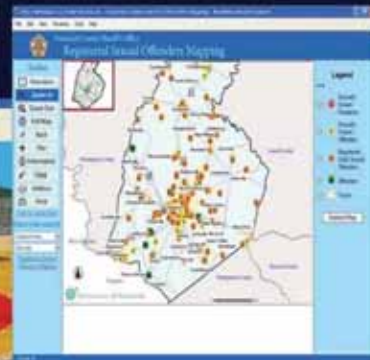
Whether Analysts Are...



Analyzing
Burglary Hotspots



Developing a
Plume Model



Monitoring Registered
Offenders

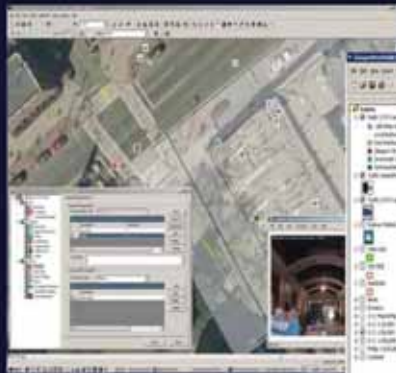
Provides Tools And Capabilities To Improve Awareness And Decision Making...

GIS Provides Capability For Visualization And Dissemination



Maps Provide A Way To Understand Information Quickly And Accurately...

Whether Officers Are....



Viewing Critical Infrastructure Assessments



Conducting a Post-Terrorist Event Investigation



Using a Common Information Platform

Maps Provide A Way To Understand Information Quickly And Accurately...

Role of AI & ML in Public Safety



Incident Management

Predict Incident Locations, Classify by Severity, Optimize Asset/PCR Van Allocation

AI for Crime Analytics



Predicting Crime when and where



Predicting Who Will Commit a Crime



Predicting Future Accident Sites

Optimizing PCR Van Allocation

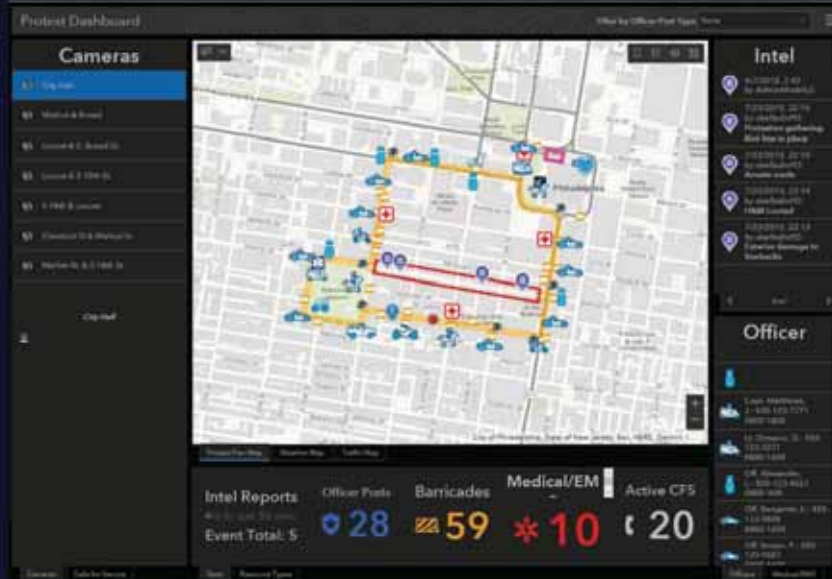
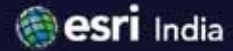


- Optimize the allocation of Police Patrols & Ambulance Cars based on the Predicted Accident Locations
- Root-cause Analysis

Police Dashboard – Crime Analytics & Hot Spots



Police Dashboard – Planning Tactical Operations



To Sum Up



- **Enterprise GIS Platform will enable**
 - Aggregation of data from multiple sources
 - Operations Management
 - Geographically Enabled Crime Analysis
 - Intelligence Support
 - Logistics and Asset Management
 - Traffic Planning and Management
 - Capacity Planning
 - Common Operating Picture



Learning & Development

Excellence

Dignity

Agility



स्वावलंबन के पथ पर अग्रसर

Technologies for Predicting Offenders, Predicting Perpetrator Identities & Predicting Crime Victims

Sanjoy Sarma
Maj. Gen. S.K Pillai (retd.)

TATA POWER SED
Engineering Strategic Systems for Substantive Self-Reliance

RESTRICTED

Agenda



- Introduction
- Key Technologies
 - Integrated Intelligence Analytics Platform
- Cyber Threat Intelligence
- A look into the future

TATA POWER SED
Engineering Strategic Systems for Substantive Self-Reliance

RESTRICTED

स्वावलंबन के पथ पर अग्रसर

Tata Power SED - Overview



- More than **4 decades of partnership** with MoD, Armed Forces, DPSUs & DRDO for Development & Supply of state-of-the-art systems
- **Integrated design-to-production** capability with specific domain expertise in the areas of
 - Air Defence
 - Electronic Warfare
 - Command & Control
 - Tank & Arty Gun Ballistics
 - Servo Control & Drive Electronics for Platform positioning & tracking
- Evolution into a **Systems & Engineering** Company having been awarded programs of national importance such as
 - Pinaka MBRL / Akash Launchers for Army & Air Force / Strategic Missile Launcher / MR-SAM Launchers
 - Samyukta Integrated EW
 - FADHS & COTS ADHS – C&C for Air Defence
 - Naval Combat
 - Modernisation of Airfield Infrastructure (MAFI-I)
- **Integrated operations** at Mumbai and Bengaluru are accredited with ISO 9001:2008 and successfully appraised for CMMI DEV L5 v1.3
- **500 seater Defence R&D Centres** in Mumbai & Bengaluru and Defence Production & Maintenance Factory at Bengaluru



Dedicated Defence R&D Facility since 1974



Dedicated R&D and Defence Production Facility since 1982

TATA POWER SED

Engineering Strategic Systems for Substantive Self-Reliance

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Defence Research & Development



Dedicated Defence R&D Facility since 1974

DSIR Recognised R&D at Mumbai and Bengaluru

स्वावलंबन के पथ पर



TATA POWER SED

Engineering Strategic Systems for Substantive Self-Reliance

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DIGITALISATION



GREAT CONVENIENCE + GREATER THREATS

- CYBER CRIME
 - ESPIONAGE
 - THEFT
 - FRAUD
 - HARASSMENT
 - CHILD PREDATORS
 - RADICALISATION
 - IDENTITY THEFT
 - ILLEGAL ACTIVITIES IN THE DARK WEB

IMMEDIATE OBJECTIVES



- INTELLIGENCE GATHERING THROUGH THE INTERNET AND SOCIAL MEDIA.
- PREDICTIVE ANALYSIS OF CRIME.
- SOCIAL MEDIA – AN IMPORTANT TOOL TO COMMUNICATE WITH THE PUBLIC
- ISSUE GUIDELINES ON CYBERSECURITY TO COMPUTER AND INTERNET USERS.
- ALERT INDIVIDUALS AND ORGANISATIONS ABOUT CYBER ATTACKS.

Key Technologies

KEY TECHNOLOGIES

- BIG DATA STORAGE AND MASSIVELY PARALLEL PROCESSING ARCHITECTURE
- MACHINE LEARNING WITH FOCUS ON DEEP LEARNING IMPLEMENTATIONS
- PREDICTIVE ANALYTICS
- GIS
- PRIVATE CLOUD
- APPLICATIONS – **MULTI MODAL DATA ANALYTICS**
 - TEXT ANALYTICS
 - AUDIO ANALYTICS
 - VIDEO AND IMAGERY ANALYTICS
- SECURITY OVERLAY

NEXT GENERATION SOLUTIONS

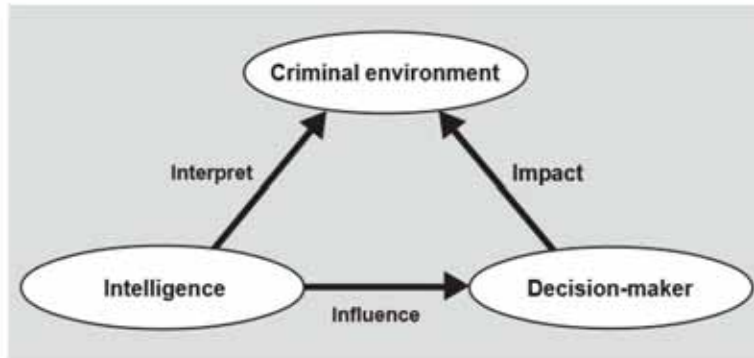


- **INTELLIGENCE ANALYSIS PLATFORM**
 - INTELLIGENCE LED POLICING AND PREDICTIVE POLICING
 - ABILITY TO DERIVE ACTIONABLE INTELLIGENCE FROM VOICE, VIDEO AND TEXT
- **CYBER THREAT INTELLIGENCE**
 - A ROBUST SYSTEM FOR THE SHARING OF CYBER-THREAT INFORMATION AND INTELLIGENCE
 - GENERATES CYBER SITUATIONAL AWARENESS

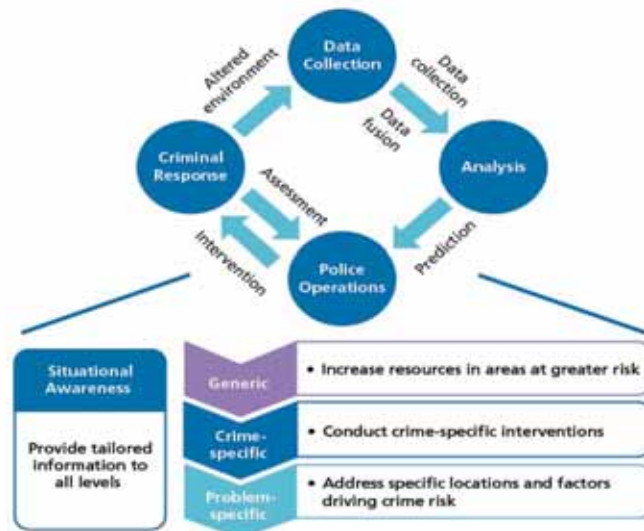


INTEGRATED INTELLIGENCE ANALYSIS PLATFORM

INTELLIGENCE LED POLICING



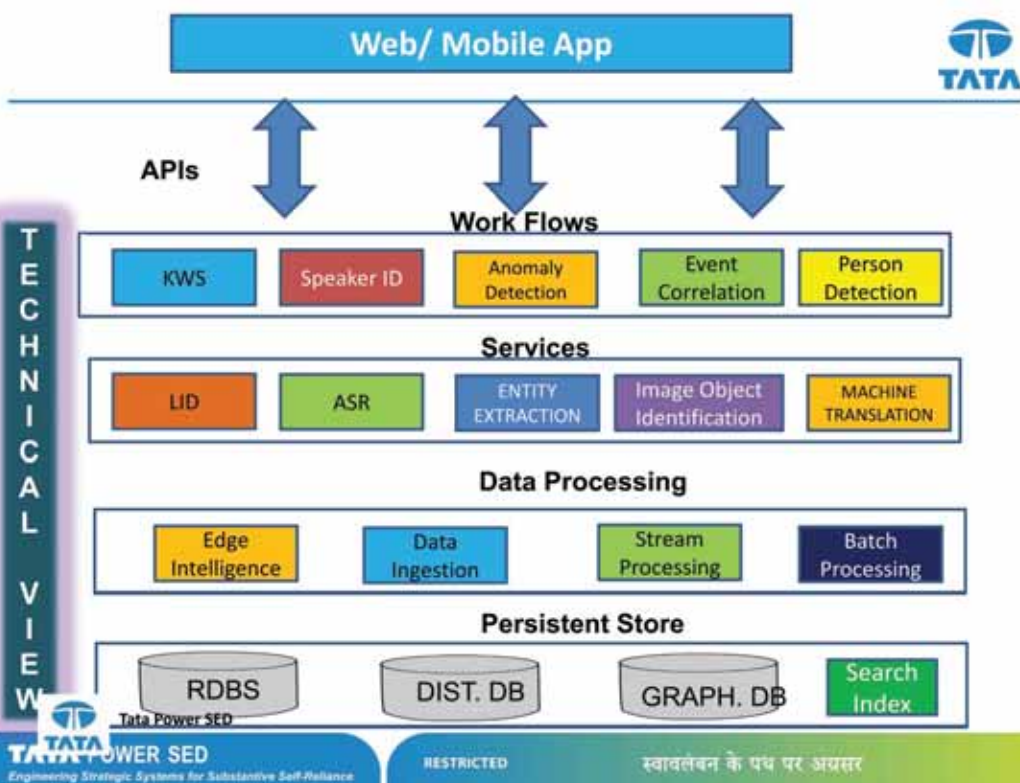
PREDICTIVE POLICING



AUDIO ANALYTICS



- AUDIO ANALYTICS SOLUTION.
- LANGUAGE ID.
- SPEAKER ID .
- SPEECH TO TEXT IN NATIVE LANGUAGE.
- KEYWORD SPOTTING.
- MACHINE TRANSLATION TO ENGLISH FROM NATIVE LANGUAGE.
- PRESENTLY SUPPORTS ASSAMESE, NAGAMESE, MANIPURI, ENGLISH, HINDI.
- ADDITION OF LANGUAGE PACKS AS PER USER REQUIREMENT





TEXT ANALYTICS

- TEXT ANALYTICS SOLUTION.
- INGESTS DATA FROM MULTIPLE SOURCES - DIAL 100, FIRs, DIARIES, OPEN SOURCE, CDRs ETC.
- EXTRACT NAMES AND ENTITIES.
- SENTIMENT/OPINION MINING/ LINK ANALYSIS/ SEARCH/VISUALISATION.
- DEVELOPED SPECIFICALLY FOR THE INTELLIGENCE AND LAW ENFORCEMENT ENVIRONMENT.
- USE LATEST TECHNOLOGIES SUCH AS “NATURAL LANGUAGE UNDERSTANDING (NLU)” TECHNOLOGY AS AGAINST NATURAL LANGUAGE PROCESSING (NLP).

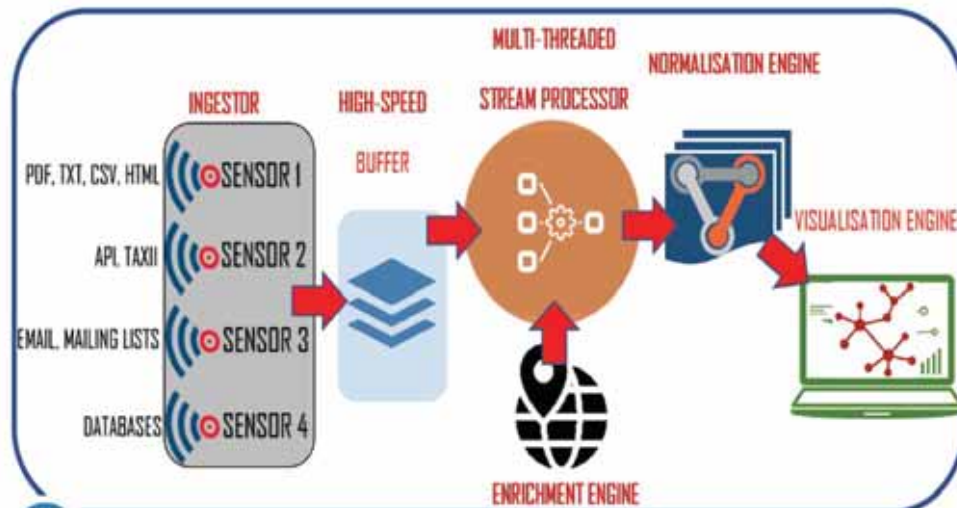


VIDEO ANALYTICS

- COMPREHENSIVE VIDEO FOOTAGE MANAGEMENT.
- SMART DATA COMPRESSION ALGORITHMS.
- FACIAL RECOGNITION.
- AUTOMATED NUMBER PLATE RECOGNITION.

CYBER THREAT INTELLIGENCE

ARCHITECTURE





MAIN FEATURES

- INGEST STRUCTURED AND UNSTRUCTURED DATA IN REALTIME.
- FAULT TOLERANT SYSTEM THAT WILL NOT MISS ONE BYTE OF DATA.
- MULT-DIMENSIONAL FUSION CORRELATING THREAT INDICATORS RECEIVED FROM VARIOUS SOURCES.
- ENRICHMENT AUGMENTS THE FUSED DATA WITH OTHER SOURCES OF INTELLIGENCE.
- CONVERT TO A STANDARDISED FORMAT SUCH AS STIX.
- ANALYTICS, SEARCH AND VISUALISATION.

TATA POWER SED

Engineering Strategic Systems for Substantive Self-Reliance

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A LOOK INTO THE FUTURE

KEY TECHNOLOGY NEEDS

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KEY NEEDS



- IMPROVED TECHNOLOGIES FOR SAFELY DIFUSING OR DISABLING PEOPLE, GROUPS, AND VEHICLES.
- NETWORK CENTRIC POLICING – LEVERAGING ADVANCES IN DRONE, GPS ,SENSOR AND COMMUNICATION TECHNOLOGIES.
- SECURITY OF POLICE COMMUNICATIONS.

KEY CHALLENGES



- GIVEN INDIA'S DIVERSITY NEED ABUNDANT TRAINING DATA AND ACCESS TO ACTUAL DATA - A MAJOR CHALLENGE
- FUNDING AS THIS IS SEEN AS A RISKY INVESTMENT GIVEN THE UNCERTAINTY OF COMMERCIAL VIABILITY.
- RELUCTANCE TO LOOK AT HOME GROWN SOLUTIONS , PREFERENCE FOR PROVEN SOLUTIONS KILLS LOCAL DEVELOPMENT.

KEY NEEDS



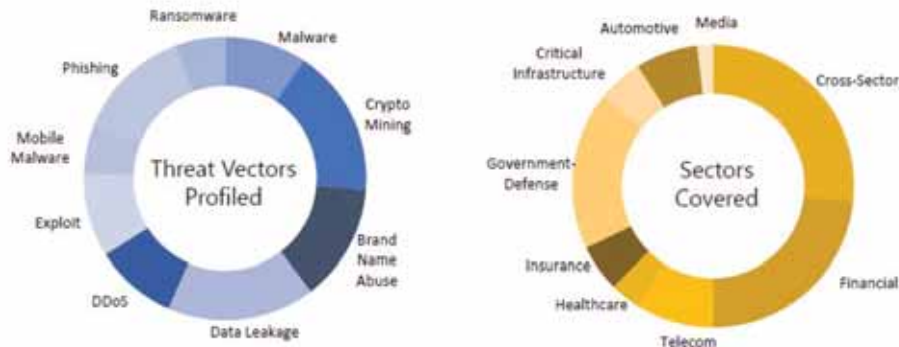
- TAGGING AND TRACKING TECHNOLOGIES FOR INVENTORY, EQUIPMENT, AND PEOPLE FOR BOTH ADMINISTRATIVE AND INVESTIGATIVE PURPOSES .
- IMPROVED TRANSLATION TECHNOLOGIES, INCLUDING DIALECT, INDIGENOUS LANGUAGES, AND CULTURAL FACTORS.
- METHODS TO PERMIT LAW ENFORCEMENT PERSONNEL TO CREATE AND USE VIRTUAL IDENTITIES FOR VALID LAW ENFORCEMENT PURPOSES.
- TECHNOLOGY TO IDENTIFY IN THE FIELD WHEN SOMEONE IS UNDER THE INFLUENCE OR IMPAIRED FROM ALCOHOL, DRUGS AND BIOLOGICAL AGENTS

COLLABORATION



- NEED TO CO-DEVELOP SOLUTIONS WITH END USERS AS A COLLABORATIVE PARTNERSHIP
- NEED R&D FUNDING FOR SELECTED ENTITIES
 - TRANSPARENT PROCESS TO IDENTIFY PROSPECTIVE PARTNERS
- ENSURE LONG TERM COMMERCIAL VIABILITY OF THE SOLUTIONS
- HELP IN BUILDING WORLD CLASS COMPANIES
- CREATE CLOSE KNIT RELATIONSHIPs BETWEEN RESEARCH, ACADEMIA, USERS AND INDUSTRY
- WILLINGNESS TO BE A ALPHA SITE

Cyber Threat Vectors – a global perspective



CYBER MISSION

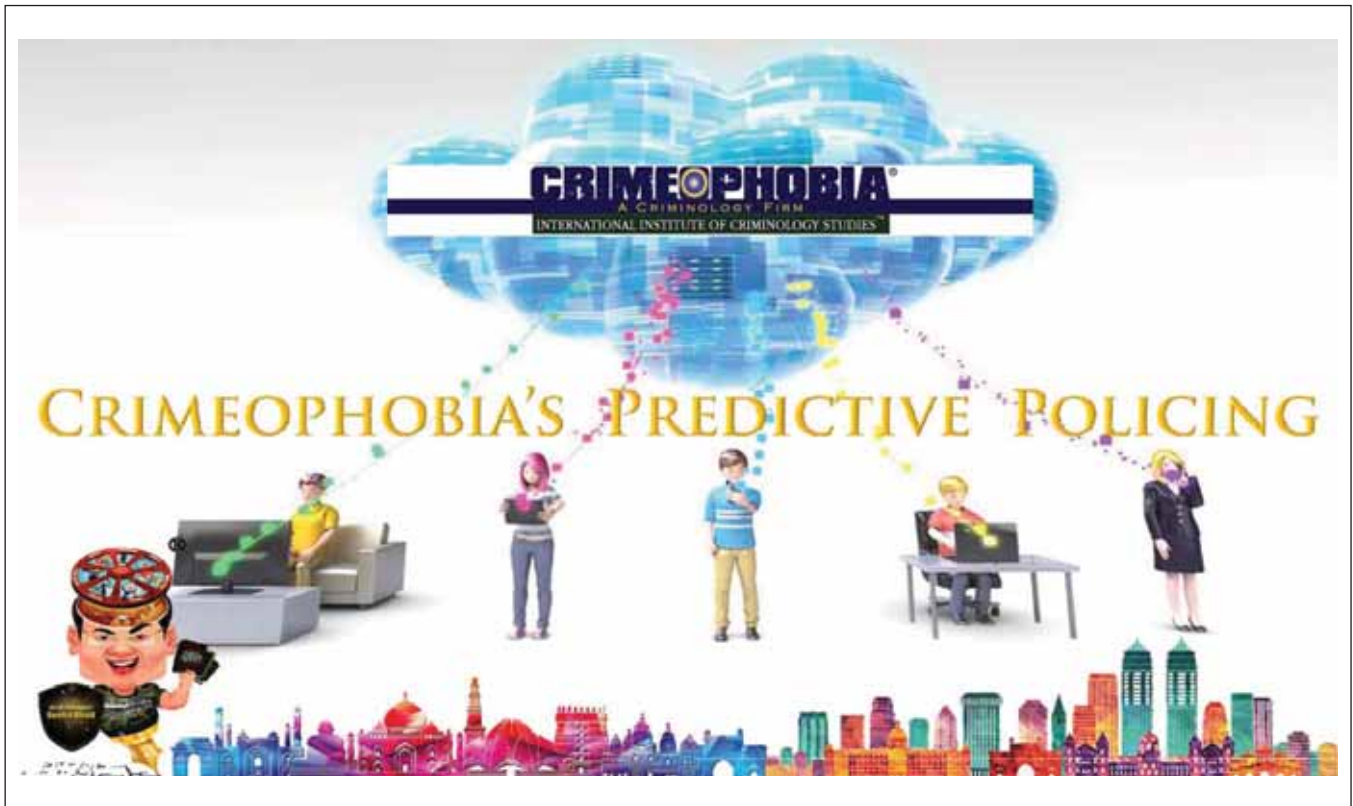


- TO STOP THOSE BEHIND THE MOST SERIOUS COMPUTER INTRUSIONS AND THE SPREAD OF MALICIOUS CODE
- COUNTERACT OPERATIONS THAT TARGET INTELLECTUAL PROPERTY, ENDANGERS NATIONAL SECURITY AND COMPETITIVENESS
- DISMANTLE NATIONAL AND TRANSNATIONAL ORGANIZED CRIMINAL ENTERPRISES ENGAGING IN INTERNET FRAUD
- TO IDENTIFY AND THWART ONLINE SEXUAL PREDATORS WHO USE THE INTERNET TO MEET AND EXPLOIT CHILDREN AND TO PRODUCE, POSSESS, OR SHARE CHILD PORNOGRAPHY
- EFFECTIVELY MONITOR CYBER SPACE FOR ANTI NATIONAL ELEMENTS

CRIMEOPHOBIA®

A CRIMINOLOGY FIRM

INTERNATIONAL INSTITUTE OF CRIMINOLOGY STUDIES™



TRANSNATIONAL ORGANISED CRIME

COORDINATED ACROSS NATIONAL BORDERS

Systematic use of violence and corruption against National Laws



CRIMINOLOGY

SCIENTIFIC STUDY OF CRIME & CRIMINALS

Criminology is an area of sociology that focuses on predictive study of crimes and their causes, effects, and social impact.



CRIMINOLOGIST

PREDICTING & PENETRATE THE CRIMINALS MIND

A Criminologist's job responsibilities involve analyzing data to determine why the crime was committed and to find ways to predict, deter, and prevent further criminal behavior.

WHAT DO WE FOCUS ON?

Psychology behind the crime is identified before establishing the Evidence (Physical & Circumstantial), Witness and Logics/Arguments

WHERE IS PREDICTIVE POLICING USED ?

STRUCTURAL EXPERIMENTS FOR (CENTRAL) DEPARTMENT / MINISTRY OF ORGANISED CRIME DEPARTMENT

Admin in Political Structure

Practical support to Govt. Dept.

Practical support Corporate



THE ASIAN AGE
Special Task force sought for organised crime

THE HINDU

Decoding crime for the aam aadmi

The Afternoon
DESPATCH & COURIER

EMPOWERING VICTIMS

'Scam Expose Helpline'

Afternoon
DESPATCH & COURIER

SHOCKER!

BMC SCHOOL KIDS KNOW LOTS ABOUT CRIME!

Few Articles by Local & National Newspapers reviewing about the Aftermath of my Organised Crime Theories

Sustainable Operational Structure

Victim Support Center

Distance Support Technology

WHAT ARE THE BASIS OF OUR R&D ?

THEORY OF POLYMATH ORGANISED CRIME



THEORY OF MODERN CHAKRAYUH



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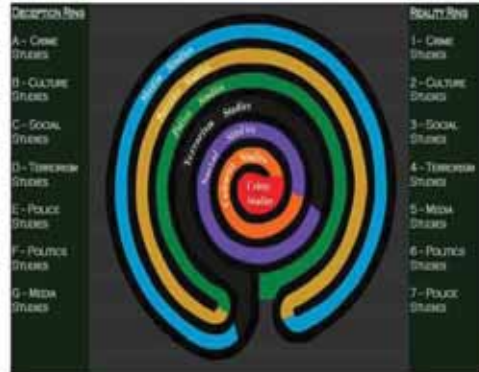
Theories to hunt the **MASTERMIND** and control their **IMPLEMENTORS**...



HOW IS BIG DATA CONTROLLED?

- **Crime, Culture, Social rings are local issues that can be controlled.**
- **Terrorism of Physical or Psychological kind is the breaking point.**
- **The issue becomes big at Media, Politics, Police rings.**
- **Deception is between Media & Police Ring**

THEORY OF MODERN CHAKRABUYH



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CRIMINOLOGIA

HOW IS THE MASTERMIND TRACED?

THEORY OF POLYMATH ORGANISED CRIME



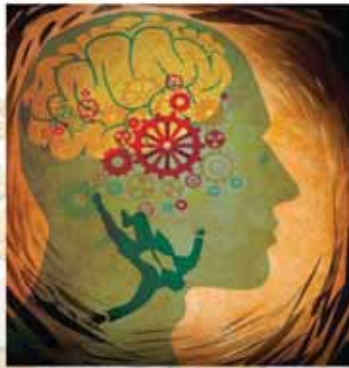
- **Pattern adopted from OSI Model (Open System Interconnection) of 7 layers.**
- **Diverting to SDN Model (Software Defining Networking) for shifting to 3 layers pattern: Infrastructure, Control and Application layers.**
- **Shifting the focus at the Centre by evaluations polymath culprit.**

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CRIMINOLOGIA

WHERE DO WE LOOK FOR CRIME ANALYTICS ?



EXTRASENSORY PERCEPTION (ESP)

- Intuition (Understanding)
- Telepathy (Feeling)
- Psychometry (Measure)
- Clairvoyance (Vision)
- Precognition (Acquiring Knowledge)
- Retrocognition (Knowing)

Organised Crime can be operated only through PREDICTIVE POLICING and its sequence & pattern has to be understood. This Sequence & Patterns are based on EXTRASENSORY PERCEPTION that are formulated as per the structure of Transnational Legal Justice System.



CRIMEPHOBIA

HOW DOES THE CONGLOMERATE WORK?

LIFE CYCLE DIAGRAM: TRANSNATIONAL ORGANISED CRIME STRUCTURE



HAVE WE PRACTICALLY USED THESE THEORIES???

Theory Practice



FIRST PREDICTIVE POLICING EXPERIMENT: 2010
RESULT WAS KNOWN TO EVERYONE AFTER 2 YEARS OF REPORTING



DECODED HONEYTRAPS

India Times Ranked Simran Sood #7 in the list of top Serial Killers



DOES PREDICTIVE POLICING DEPARTMENT NEED PHYSICAL PRESENCE?



IS THE STRUCTURE REALLY REQUIRED?



AI: AMERICAN OPERATIONAL BLUEPRINT

KEY WORDS MAPPING FROM ENGLISH MEDIA



**Not compatible for
all languages ; it has
No Filtration for
random & FAKE NEWS**



INTELLIGENCE PARAMETERS by magnetizing Media Analytical Reporting



**Illegal procedures
initiated;
Inaccurate Data as
per current affairs ;
Power Hunger cant
be relied on**



Military Ranks used for Recruitment for WHITE-COLLAR TERRORISM



Police Expo 2018, BPR&D, New Delhi, 26 July, 2018

Smart City or Safe City?

Subodh Vardhan
Managing Director
Motorola Solutions India



Smart or Not, Everyone wants a SAFE City




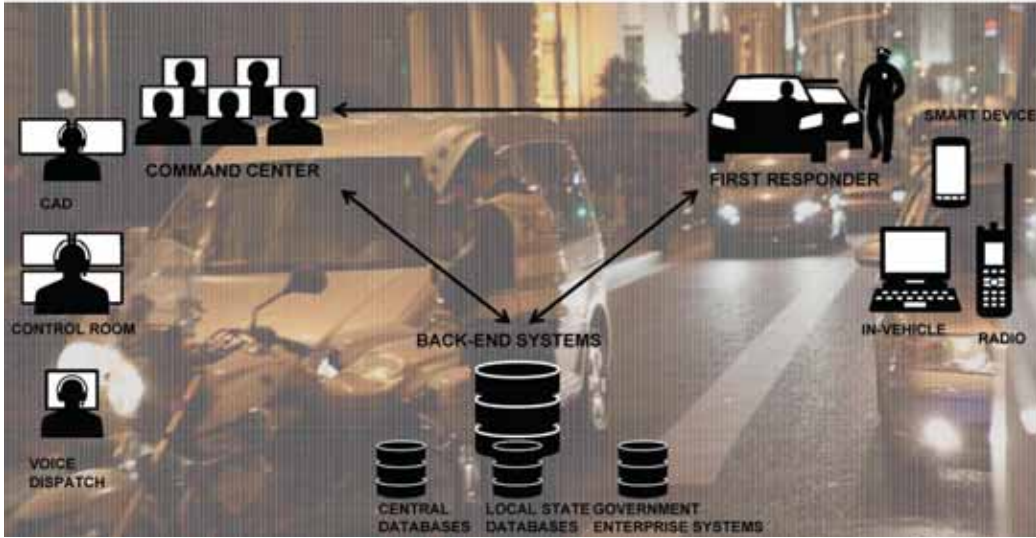
SMART Policing to build SAFE Cities

A blurred photograph of a city street with pedestrians and a car, overlaid with text. A small Motorola logo is in the top right corner of the image.

**EMERGENCY RESPONSE
SERVICES ARE
TRANSFORMING**

**FROM REACT AND RESPOND,
TO PREDICT AND PREVENT.**

INFORMATION NEEDS TO FLOW SEAMLESSLY

TRANSFORMING THE WAY TO RESPOND



MULTI-AGENCY MUTUAL AID

BRINGING TOGETHER STATE, LOCAL, FEDERAL, PUBLIC SERVICE, PUBLIC WORKS

GOVERNMENT COMMS NETWORK

Emergency Response operations are inherently multi-agency coordinated responses

Dynamically prioritize multi-agency resources for coordinated mutual aid response during incidents

Alongside police, fire & EMS, priority may be needed for state & central agencies

Priority may also be needed for municipal organizations to manage public utilities



WHAT IS A GOVERNMENT COMMUNICATION NETWORK (GCN)?



- A **single platform** wireless network that supports multiple Government organizations throughout a given geographical area
 - Exclusively used by government agencies
 - Not open to the public
 - Coverage area can be citywide, region wide or nationwide
- The single platform network is shared among different organizations which will allow users to **interoperate** among those organizations

DIGITAL OPEN STANDARD RADIO TECHNOLOGIES



APCO P25 or P25

- Association of Public Safety Communication Officials (APCO) Project 25 (P25)
- North America Standard
- Standard defined by TIA; endorsed by ANSI



TETRA

- **T**Errestrial **T**runked **R**adio
- European Standard
- Standard defined by ETSI



DMR

- **D**igital **M**obile **R**adio
- European Standard, covering both conventional & trunked radio
- Standard defined by ETSI



ITU Recommended Radio Technologies for PPDR

Purpose Built Communications


Extending talkgroups beyond push-to-talk




INTEGRATED COMMAND & CONTROL


**RIGHT INFORMATION FOR
RIGHT PEOPLE AT RIGHT TIME**








DATA SOURCES



Video Surveillance



Incident Databases and Criminal Complaints


Arrest Records & Photographs


Incident Recording


National Crime Databases CCTNS


Dial 100 Emergency



Radio Dispatch

BRINGING TOGETHER VAST STORES OF DATA FROM ACROSS THE GOVERNMENT ENTERPRISE

APPLYING ANALYSIS TO TURN INFORMATION INTO INTELLIGENCE

MAKING THAT INTELLIGENCE ACCESSIBLE BY ALL TO INFORM OUR DECISIONS AND ACTIONS

INTUITIVE COMMAND & CONTROL




TRANSFORM A COMPLEX WORLD OF VOICE & DATA INTO ONE, COMMON, REAL-TIME, OPERATIONAL VIEW

Open Standard Digital Radio Technology allows easy customization and interfacing to other sub-systems through well proven and documented API's

- > AVLS/GIS
- > Dial 100/112

- > Integrated CAD
- > Social Media

- > Incident Recording
- > Surveillance/CCTV


GIS/AVLS

CCTV Surveillance

Dial-100/112 Telephony

CAD/Dispatch Centre







CONNECTED POLICE OFFICER

**FASTER RESPONSES,
SMARTER DECISIONS,
SAFER OUTCOMES**



THE ERA OF MISSION CRITICAL INTELLIGENCE



MISSION-CRITICAL COMMUNICATIONS

MISSION-CRITICAL INTELLIGENCE



CONNECTING PEOPLE
Voice-Centric

CONNECTED EVERYTHING
Data-Centric

SITUATIONAL AWARENESS
Command and Control

CONTEXTUAL AWARENESS
Intelligent Edge

PHYSICAL RESOURCES
Dedicated Network / Computing / Storage

VIRTUAL RESOURCES
Shared Networks / Cloud / Data

PRODUCTS/DEVICES
Hardware-Centric

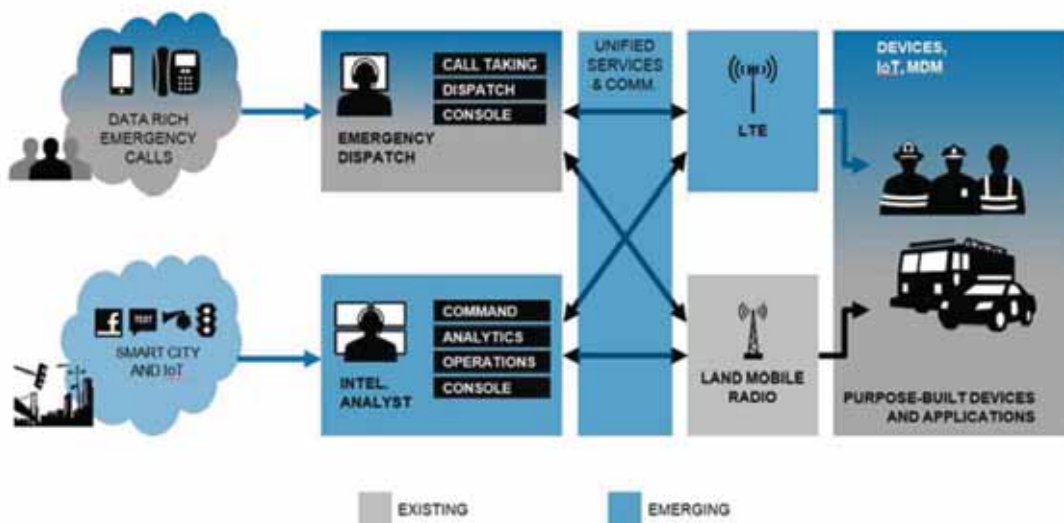
INTELLIGENT ECOSYSTEMS
Multi-Modal / Cognitive

CRITICAL COMMUNICATIONS
React and Respond

CRITICAL INTELLIGENCE
Predict and Prevent

- Mission Critical Communications is the Core Foundation and will remain so
- Mobile Broadband is the driver enabling progression from 'Communication' to 'Intelligence'
- MC intelligence will add-on to MC communications to create new levels of capabilities

LANDSCAPE FOR MISSION CRITICAL INTELLIGENCE



Innovating to Connect the Team - Delivering Communications + Intelligence

SUMMARY - KEY CONSIDERATIONS FOR SAFE CITIES



- A city's safety cannot depend upon public cellular networks
- Need common captive mission critical communication networks for exclusive use of first responders
- Standards based technologies that are spectrally efficient
- Inter agency collaboration is MUST
- Integrated Command Control needs to seamlessly interface with Communication and Surveillance systems to provide a Single Operating Picture

**SAFER CITIES.
THRIVING COMMUNITIES**

***FASTER RESPONSES,
SMARTER DECISIONS,
SAFER OUTCOMES***

Subodh Vardhan
Subodh.vardhan@motorolasolutions.com

PUBLIC PROCUREMENT IN INTERNAL SECURITY - WAY AHEAD

Presentation by:

COL. A K GUPTA (RETD)
Vice President (Marketing- Central)

 ALPHA DESIGN
TECHNOLOGIES PVT. LTD.
New Delhi, India

INDUSTRY PERSPECTIVE OF NUMEROUS CHALLENGES FOR PROCUREMENT BY INTERNAL SECURITY FORCES IN AREAS OF :-

- Policies & regulation
- Processes
- Technological advancements
- Capacity building

- Whereas CAPF have formed a well organised system of procurement, in the state police forces the nature and requirement of public procurement process is different.

- As far as the industry is concerned it has a pan India outlook and caters for common requirement of all India as it is difficult to cater separately for different states having different policies & regulations.
- Therefore states should form a common procurement policy like Defence Services or CAPFs.
- Common policy should lay down procurement norms like QR, evaluation process, trial directive, contract guidelines etc with a larger perspective of the total environment.
- A well laid down policy is transparent and leaves no scope for being subjective.

- From the perspective of MSMEs one of the biggest problems is that of funding, as unlike in case of defence services no police organization gives an advance.
- Therefore provision of an advance to L-1 party should be considered.
- For MSMEs, as in case of EMD, exemption for PBG and WBG should be considered. Instead a corporate guarantee based on trust and commitment should be sufficient.

- The evaluation process of an equipment should be that of a selection and not rejection. The mindset to look for negative aspects to reject must change.
- Industry requires encouragement therefore there should be some leeway for it to sustain itself.
- Industry would like to field valued products that are developed & made in India therefore instead of outright rejections initial glitches must be overlooked and re-evaluation chance be given after rectification.
- Need to revise age old procedures. Even for weapon accessories import license has to be sought from DGFT. Approval is granted by MHA that takes months to grant/reject. State police must facilitate in getting the license.

- Use of IT for e-procurement.
- Common labs for testing the specifications of technology intensive eqpt.
- Should low cost, low life Chinese night vision products be acceptable? What about aftersales service?
- Technology should be usefully employed to upgrade the existing systems e.g. use of Reflex Sights on the INSAS rifles for quick & accurate shooting.
- Unique technology equipment like Cornershot could be procured on single tender as proprietary article



- **In order to effectively execute the procurement plans of the state Police Forces, it is essential that procurement personnel are adequately skilled and trained to meet the objectives of effective and transparent procurement.**
- **MSMEs are ready to invest and build up capability even in remote areas of NE and Chhattisgarh on specific requirements and commitment for assured orders from the police forces**

- **To conclude I would say that industry is not there only to make money.**
- **We make profit only to survive.**
- **We have to invest in R & D and expansion out of the meager profit in a cut throat competitive environment.**
- **Our approach is not purely commercial therefore an attitude change towards industry is required.**

PREDICTIVE POLICING

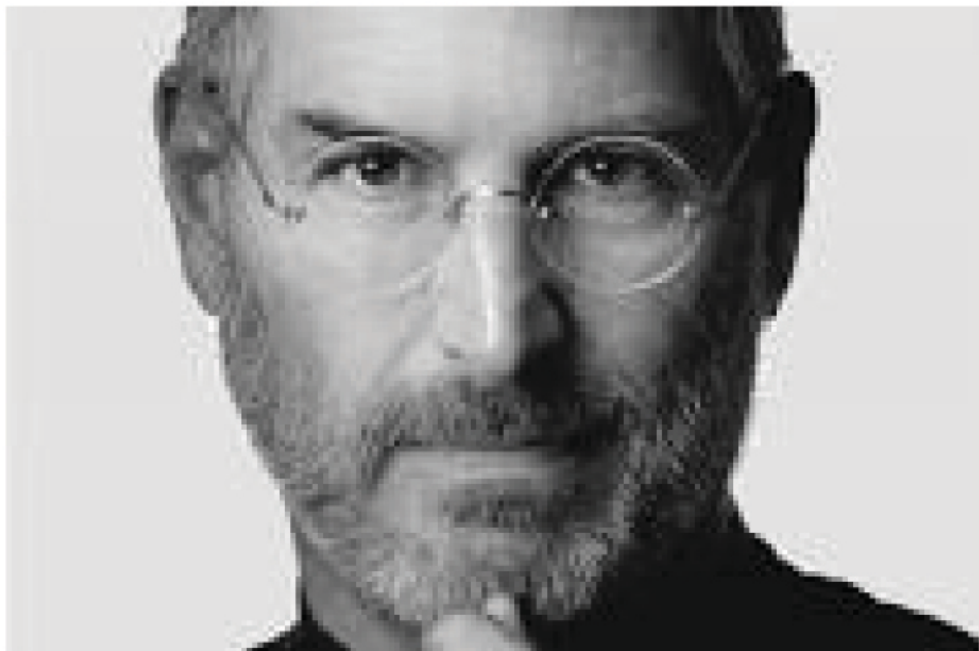
&

EMERGING TRENDS IN CYBER CRIME

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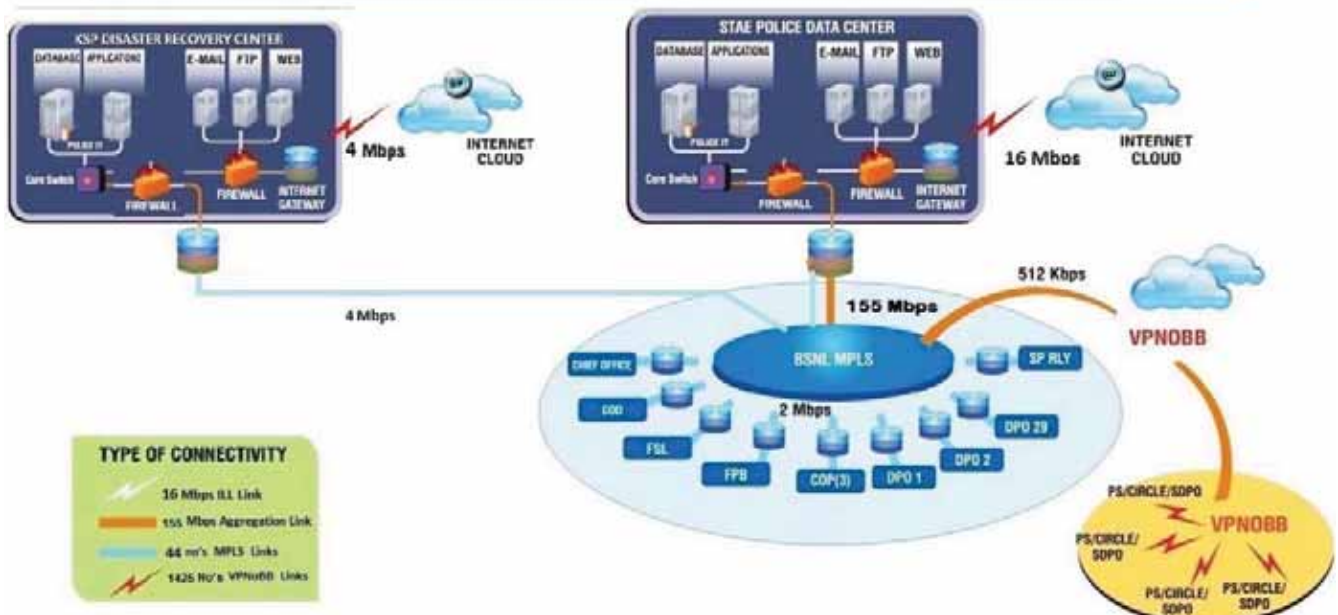
INNOVATION & ENTREPRENEURSHIP

Police IT ERP Application



- Core Functionalities**
 - › Crime
 - › Law & Order
 - › Traffic
- Administration**
 - › Administration
 - › Finance
 - › Stores
- Ancillary support**
 - › Armed Reserve
 - › Motor Transport
 - › Training
- Technical Modules**
 - › Wireless
 - › Forensic Science Laboratory

Architecture Diagram of KSPWAN





data

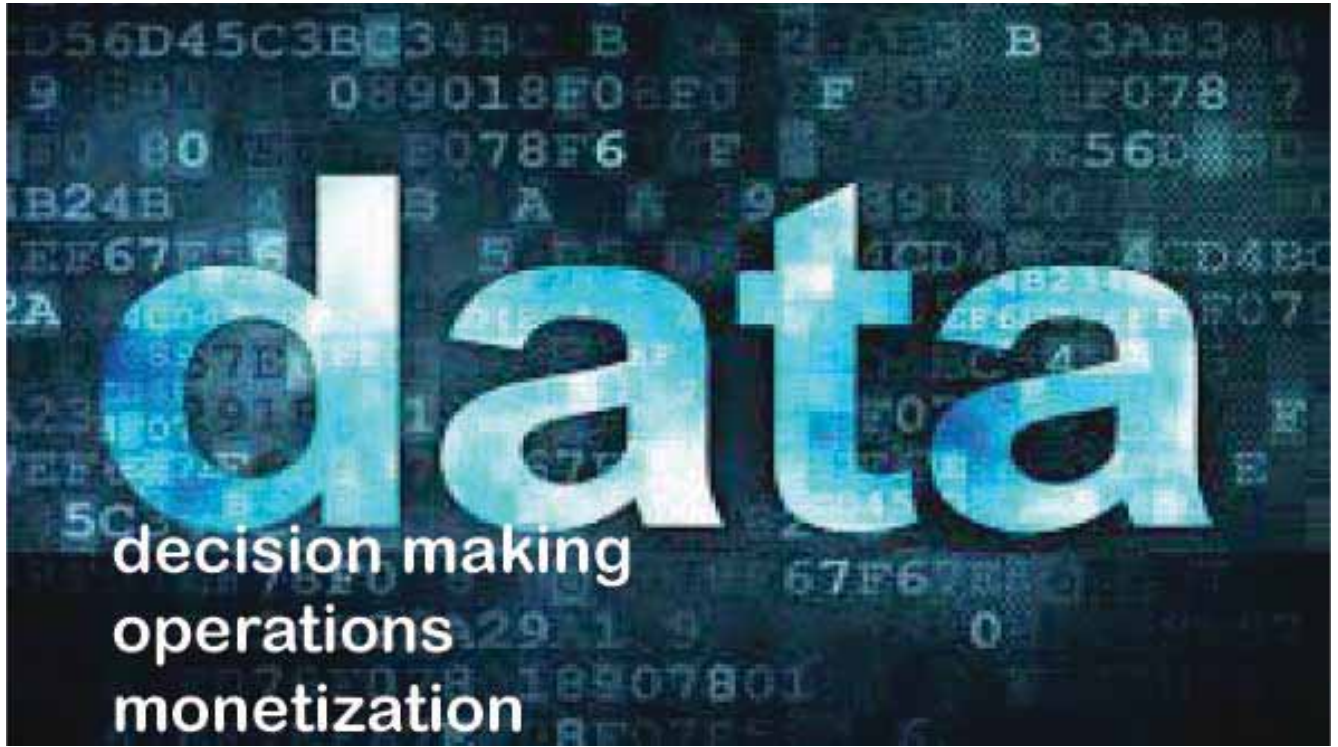
is at the centre of our universe!



We live in a

data

driven world!





**IT REVOLUTION – FOCUS
ON TECHNOLOGY, THE T**

RECAST OUR GAZE TO I

BIG DATA



Big DATA IS A REVOLUTION
THAT WILL TRANSFORM HOW WE
LIVE, WORK & think!

BIG DATA

Sloan digital sky survey 2010 – 140 terabytes , Human genome – sequence three billion base pairs, US equity market – seven billion shares change hands, Google processes 24 petabytes of data everyday, Facebook gets 10 million pics everyday, You Tube – 800 million users upload an hour of video every second !!!

In 2013 world's stored information is estimated at 1,200 exabytes, of which less than 2% is non-digital.

Big Data : Characteristics

- Volume
- Variety
- Velocity
- Variability
- Veracity
- Complexity

Big Data Analytics : 6 C System

- **Connection – Sensors & Networks**
- **Cloud – Computing & Data on Demand**
- **Cyber – Model & Memory**
- **Content / Context – Meaning & Correlation**
- **Community – Sharing & Collaboration**
- **Customization – Personalization & Value**

BIG DATA

shift in mindset about how data could be used!!!

BY CHANGING THE AMOUNT WE CHANGE THE ESSENCE

BIG DATA

AT ITS CORE, BIG DATA IS ABOUT
PREDICTIONS

BIG DATA

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AGE OF OBSESSION WITH
CAUSALITY GETS OVER

**SIMPLE CORRELATION IS IN:
NOT KNOWING WHY BUT ONLY
WHAT**

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CORRELATION

PREDICTIONS &
PREDILECTIONS

**“THE DATA DELUGE MAKES THE
SCIENTIFIC METHOD OBSOLETE”**

**“THE PETABYTE AGE” AMOUNTS TO
“THE END OF THEORY”**

We live in a data driven world

**DATA is at the center of our
universe**

Data is the biggest asset



datatombs



Value

THE “OPTION VALUE” OF DATA – PRIMARY TO SECONDARY USE
THE REUSE OF DATA
RECOMBINANT DATA
EXTENSIBLE DATA

THE VALUE OF OPEN DATA



priceless



IMPLICATIONS

**THE BIG DATA VALUE CHAIN
THE NEW DATA INTERMEDIARIES
THE DEMISE OF THE EXPERT
THE QUESTION OF UTILITY**



Problem Statements

BEST USAGE OF ERP DATA

BEYOND REPORTS AND DASHBOARDS

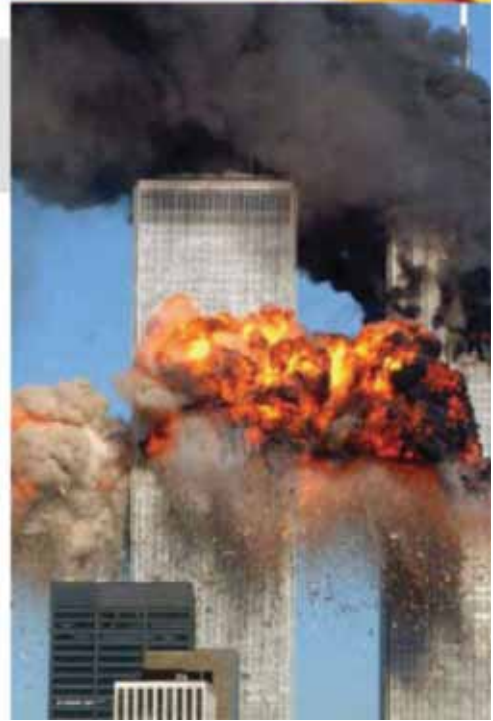


eProc Data



ROBUST COUNTER TERRORISM BIG DATA MECHANISM

- ❑ NSA collects 20 billions pieces of data everyday
- ❑ Around a million suspects
- ❑ How do connect them all?
- ❑ Or else the Paris type attacks – franchise free model of terrorism



BE DATA SMART, THE WORLD IS YOURS!!!



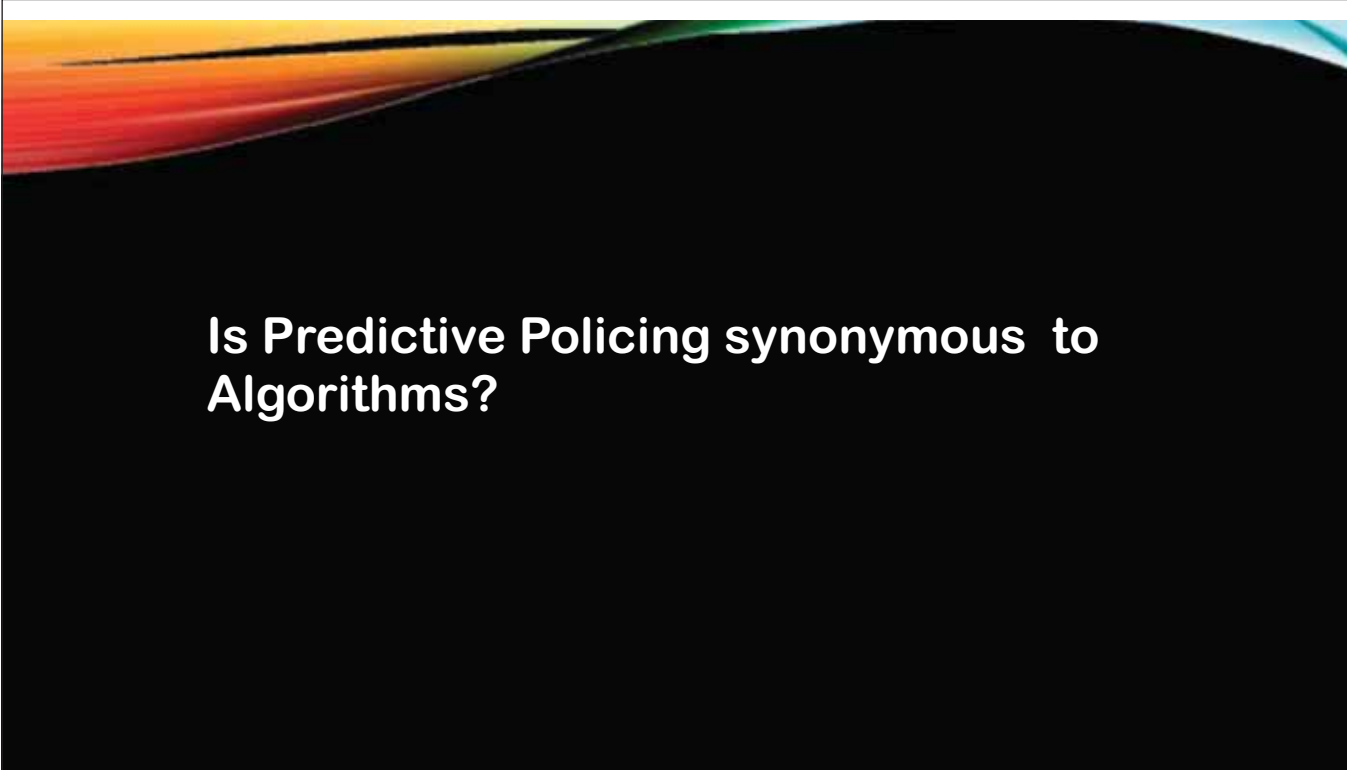
Nov, 2011, Time Magazine named Predictive Policing as one of the 50 best inventions of 2011.



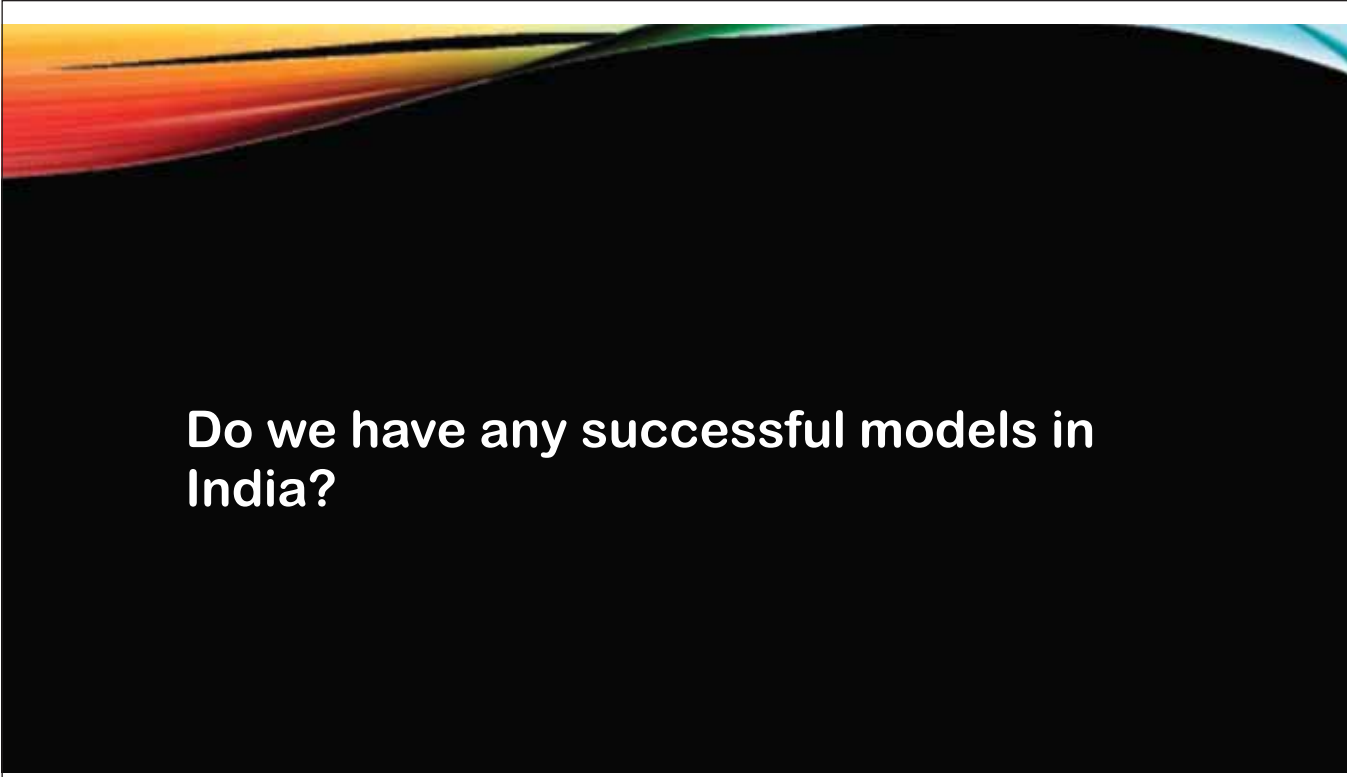
What difference has CCTNS data made in you policing?



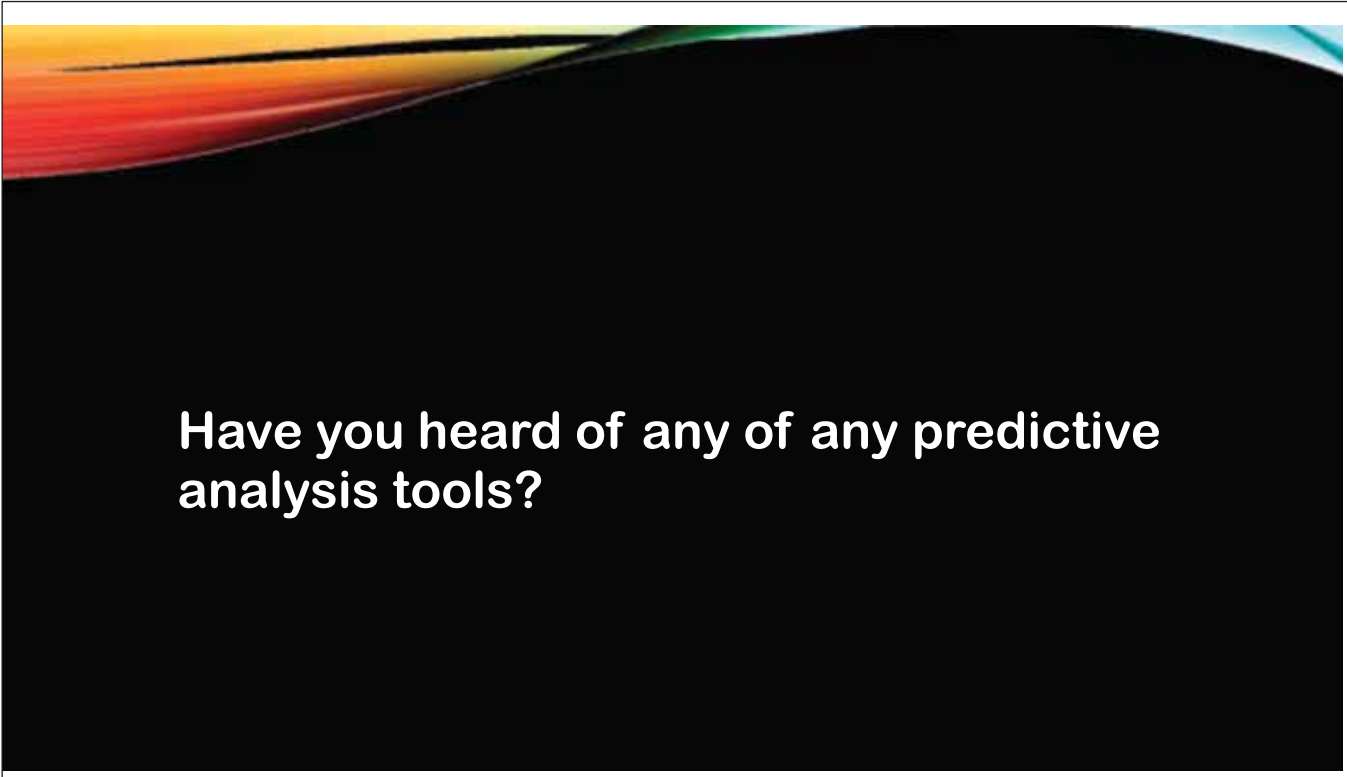
What stage of Predictive Policing are we?



Is Predictive Policing synonymous to
Algorithms?



Do we have any successful models in India?



Have you heard of any of any predictive analysis tools?

WHAT IS PREDICTIVE POLICING ?

Predictive policing refers to the usage of **mathematical**, predictive and analytical techniques in law enforcement to identify **potential criminal activity**.

PREDICTIVE POLICING METHODS

Four general categories:

methods for predicting crimes,

methods for predicting offenders,

methods for predicting perpetrators' identities, and

methods for predicting victims of crime

Predictive policing uses **data on the times, locations and nature of past crimes**, to provide **insight** to police strategists concerning **where, and at what times, police patrols should patrol**, or maintain a presence, in order to make the **best use of resources or to have the greatest chance of deterring** or preventing future crimes.

Is Predictive Policing a Black Box?

U.S. states using PP are:

California, Washington, South Carolina,
Arizona, Tennessee, and Illinois.

UK, in Kent County Police.

In China, Suzhou Police Bureau has adopted
Predictive Policing since 2013.



PredPol
Predict Crime in **Real Time**

**PredPol provides targeted, real-time crime prediction
designed for and successfully tested by officers in the field.**

CRIME PREDICTION ALGORITHM

- ❑ The algorithm used by PredPol has been published and discussed publicly in peer-reviewed papers.
- ❑ It is based on the observation that certain crime types tend to cluster in time and space.
- ❑ PredPol uses self-exciting point process models to replicate this behaviour.

CRIME PREDICTION FUNCTIONAL ALGORITHM

- ❑ PredPol takes a feed from each department's **Records Management System (RMS)** to collect crime type, location and date/time.
- ❑ This data is **collected at least daily** and feeds our prediction engine, which is **run once a day** to create predictions for each beat, shift and mission type.
- ❑ The data collected does **not include any personally identifiable information (PII)**.

CRIME PREDICTION FUNCTIONAL ALGORITHM

- ❑ Initially several years of data is processed to lay down a “background” level of **crime patterns** and to understand how crimes propagate throughout the city.
- ❑ This is done using an **Epidemic Type Aftershock Sequence (ETAS) Model**, which is a self-learning algorithm.

- ❑ As **new crimes** come in, they are **mapped against existing patterns** and events in the city. Based on the **propagation patterns** uncovered by the initial analysis of the data, we **predict when and where similar crimes** related to these crimes are most likely to occur.
- ❑ Every **6 months**, we force a “**re-learning**” of the **patterns** using all historical and recent crime data. This ensures that **new patterns of behavior** are picked up by the system as well.

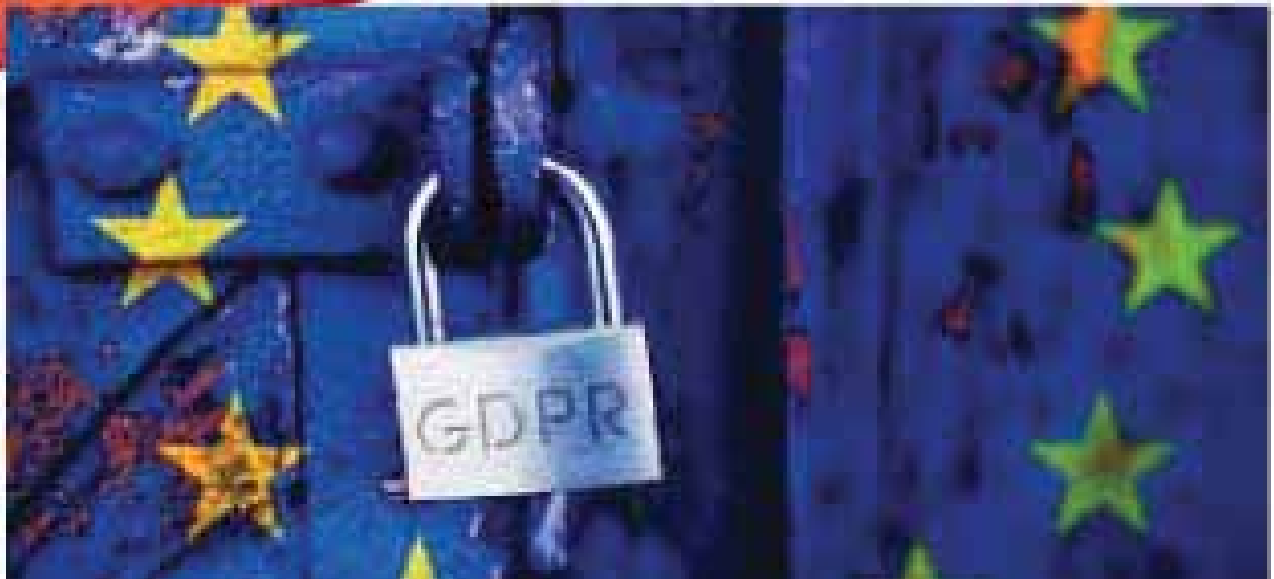


Palantir
Technologies

privacy

in its simplest sense, allows each human being to be left alone in a core which is inviolable.

Issues?



What the Judgments Say

There were six judgments by the nine-judge bench. Here's the heart of what they said about privacy

Privacy includes at its core the preservation of personal intimacies, the sanctity of family life, marriage, procreation, the home and sexual orientation. Privacy also connotes a right to be left alone. Privacy safeguards individual autonomy and recognises the ability of the individual to control vital aspects of his or her life"



JS Khehar



RK Agrawal



DY Chandrachud



S Abdul Nazeer

KEY PRINCIPLES

- Technology agnosticism
- Holistic application
- Informed consent
- Data minimisation
- Controller accountability
- Structured enforcement
- Deterrent penalties

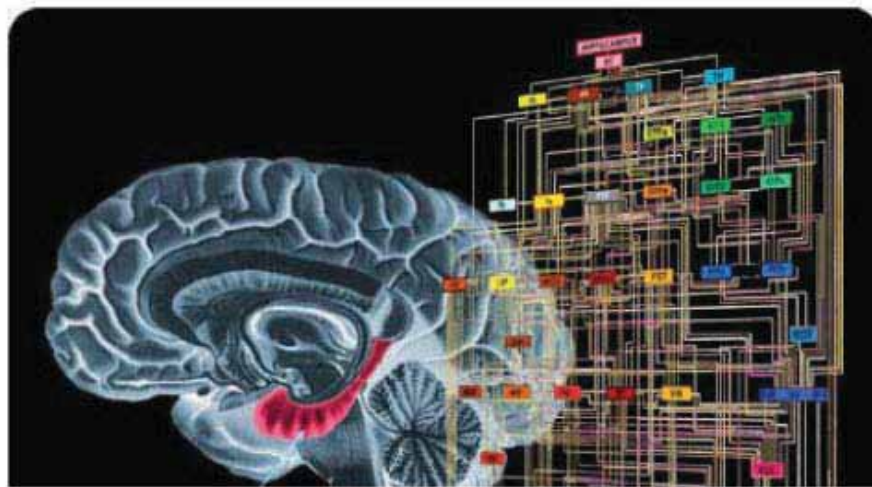


Are we ready?



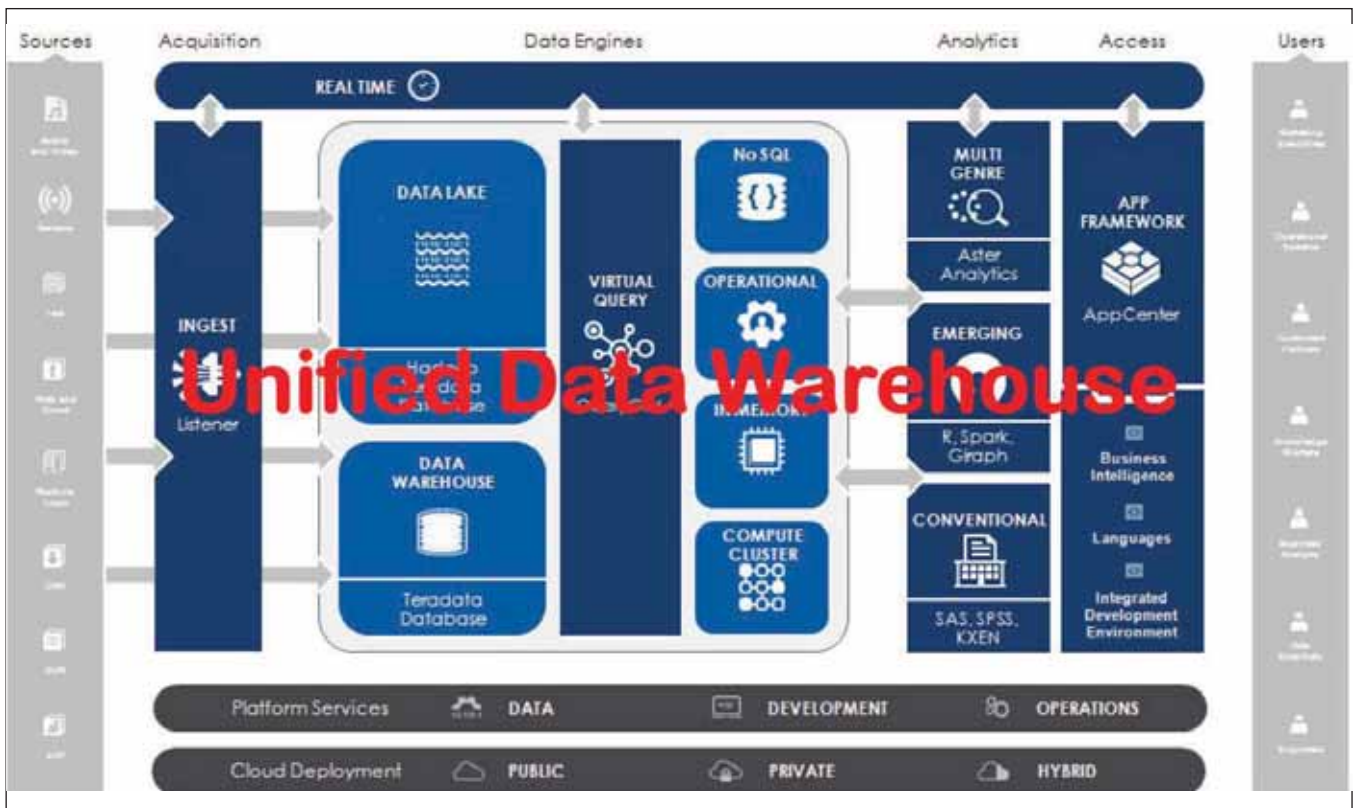
Latent Data

Transient Data



Where does data come from?





Machine Learning

Deep Learning

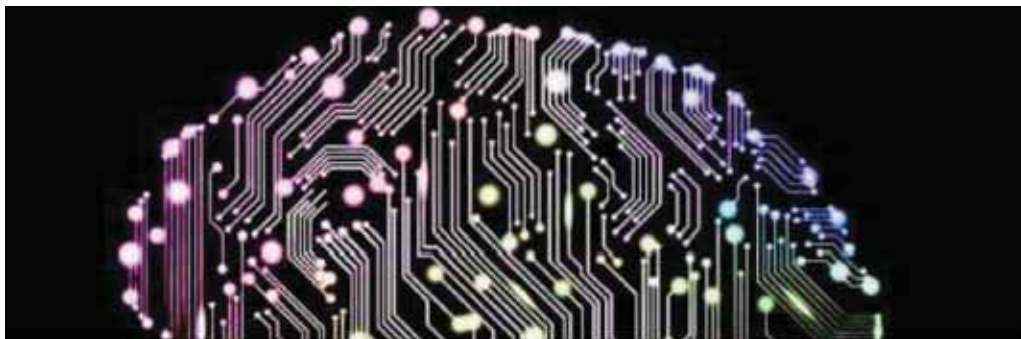
Artificial Intelligence

Be Automation Ready to face the future!



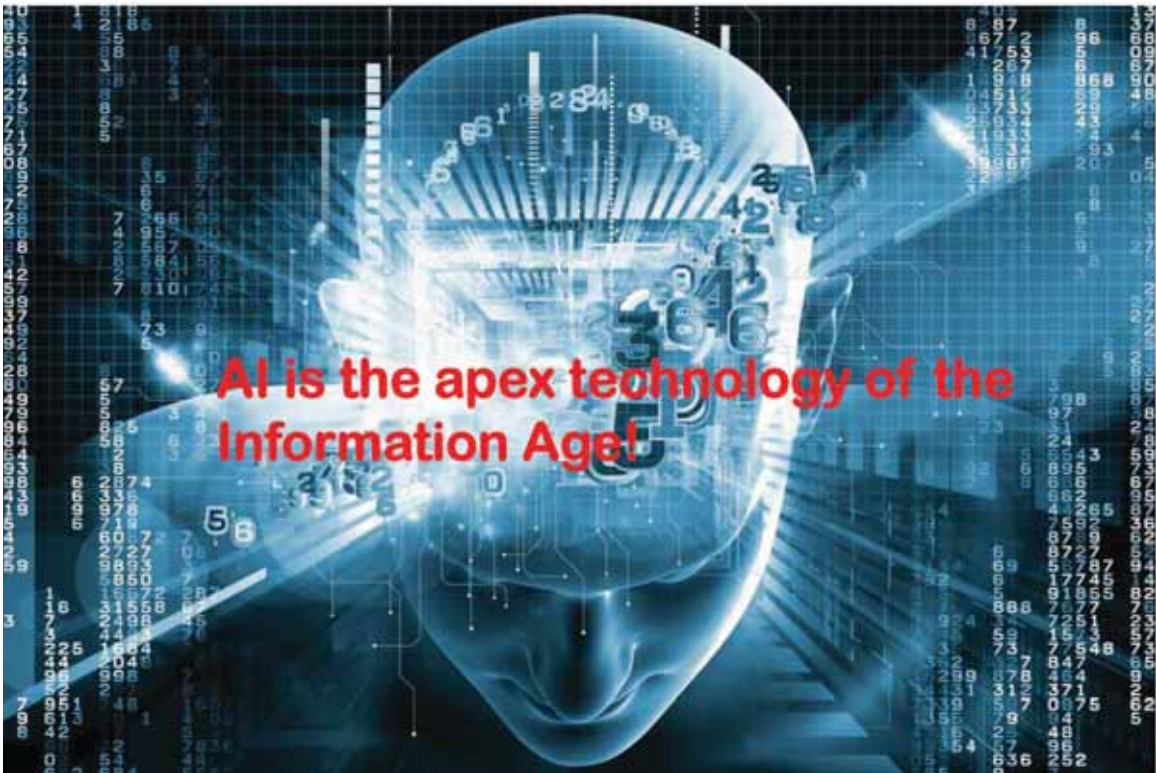


Solve intelligence. Use it to
make the world a better place.



Being proficient in AI is a survival issue

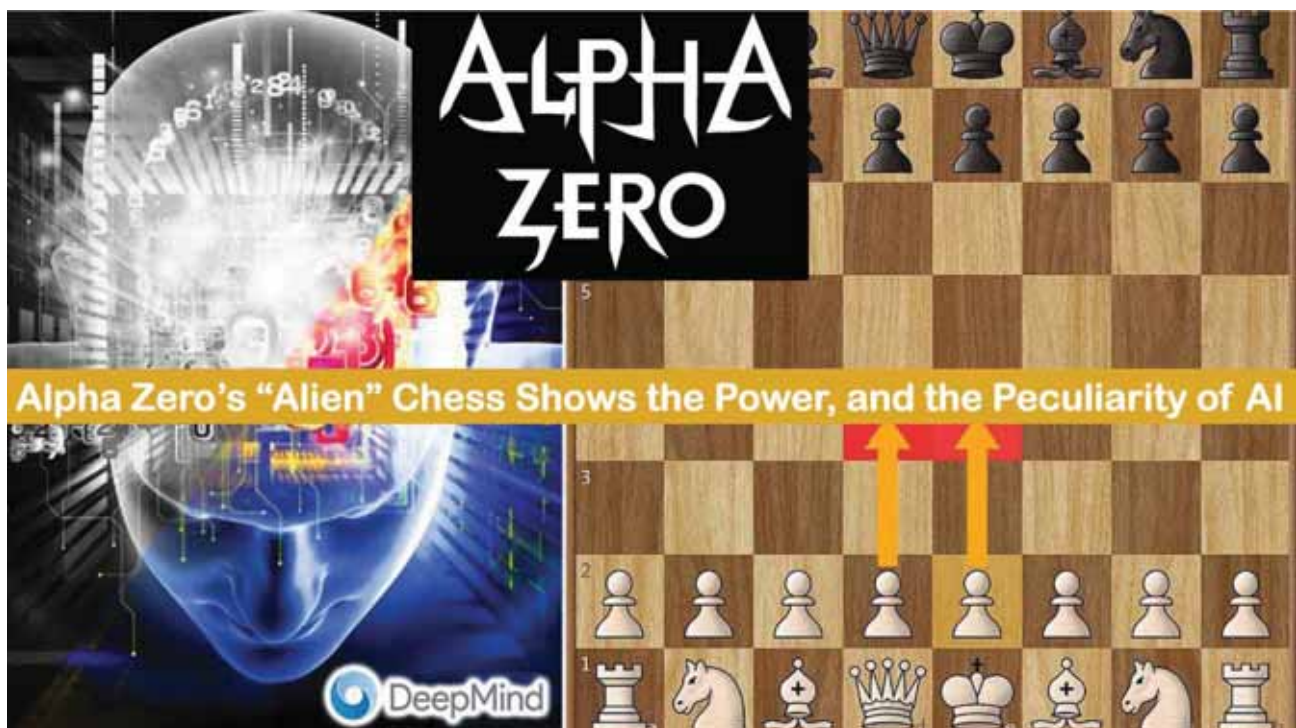




- Knowledge
- Reasoning
- Common Sense
- Learning
- Decision Making

Some types of Machine Learning

- ❑ **Classification** – Classify emails as spam, identify fraud, facial recognition, voice recognition etc
- ❑ **Clustering** – Comparing images, text or voice find similar items; identify clusters of unusual behaviour
- ❑ **Predictive** – Predict the likelihood of customer or employee churn based on web activity and other meta data





Disrupt or be disrupted!



BLOCKCHAIN

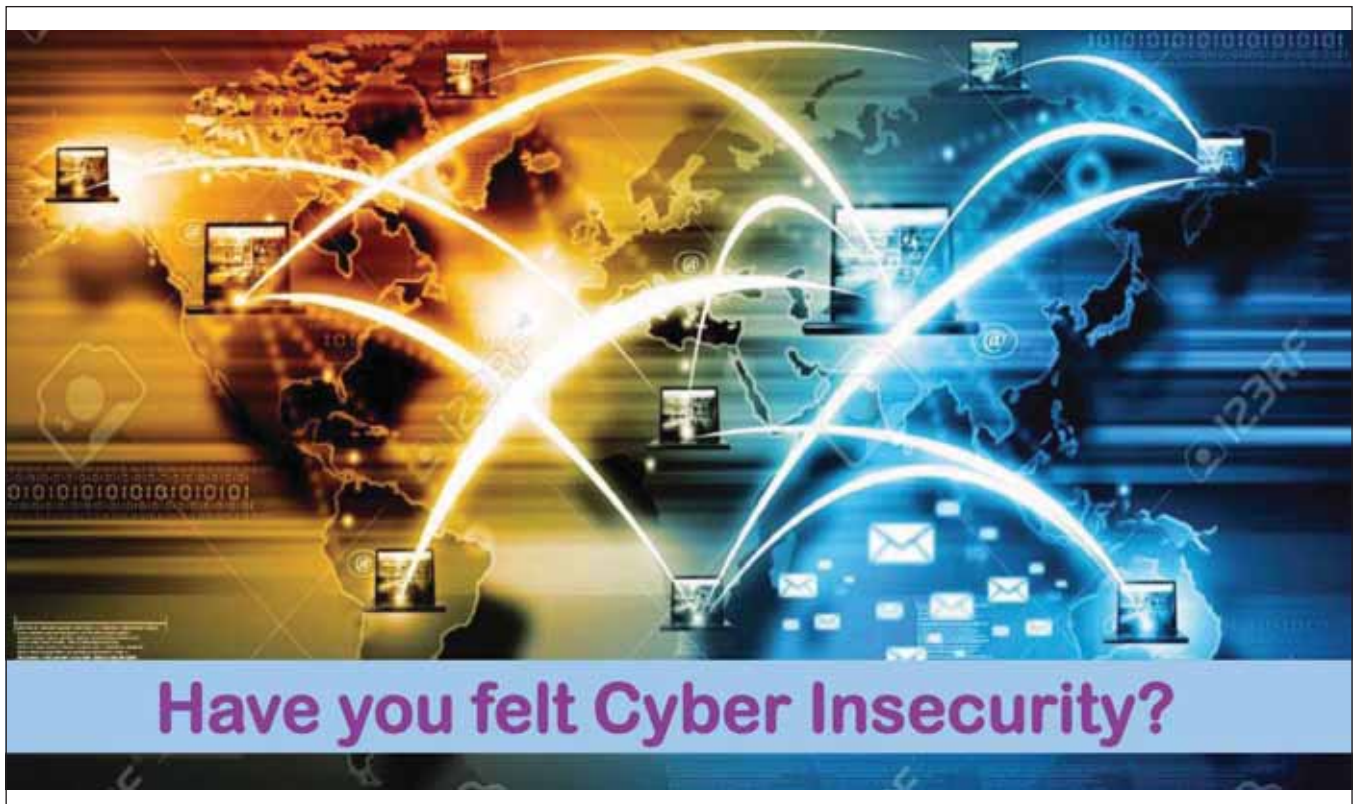
Internet of information to internet of value

SECURITY

Cyber Crime

Overview

Preparedness for future...



Have you felt Cyber Insecurity?

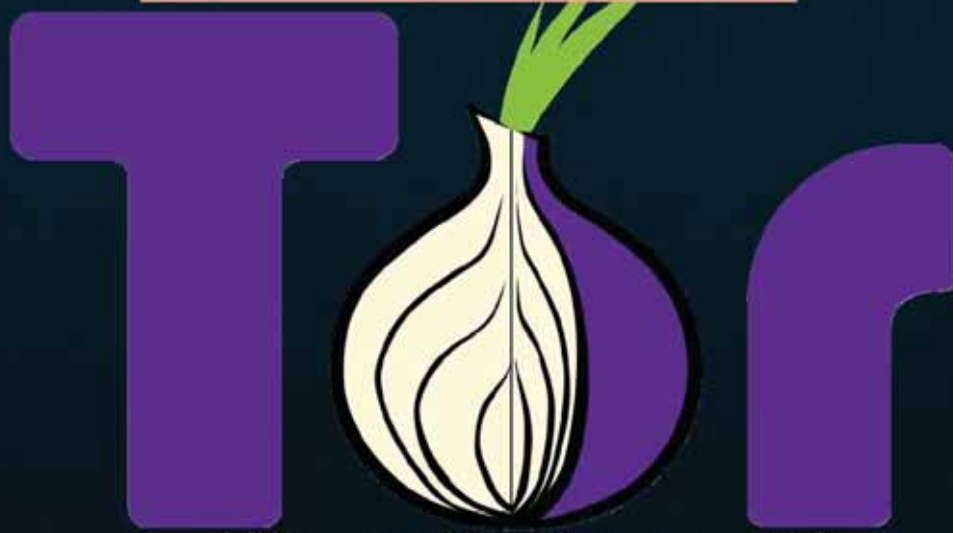


Can we fathom out of the challenge?



Who are the best adopters of technology?

One of its kind



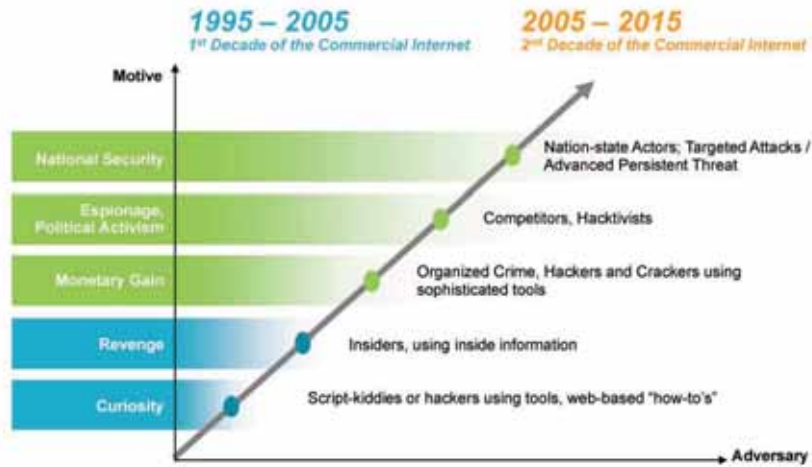
Who will take a call?

Zero Day

at the heart of it all



The sophistication of cyber threats, attackers and motives are rapidly escalating.



*X-Force Research - 2013
October 26, 2018



Getting hacked in the new normal.
Sanjay Sahay



Nothing is certain except...
Have a cyber incident response plan ready.



Digital Iron Dome



Massive attack on Israel's National Electricity Grid

STUXnet

The World's First Digital Weapon

9/11

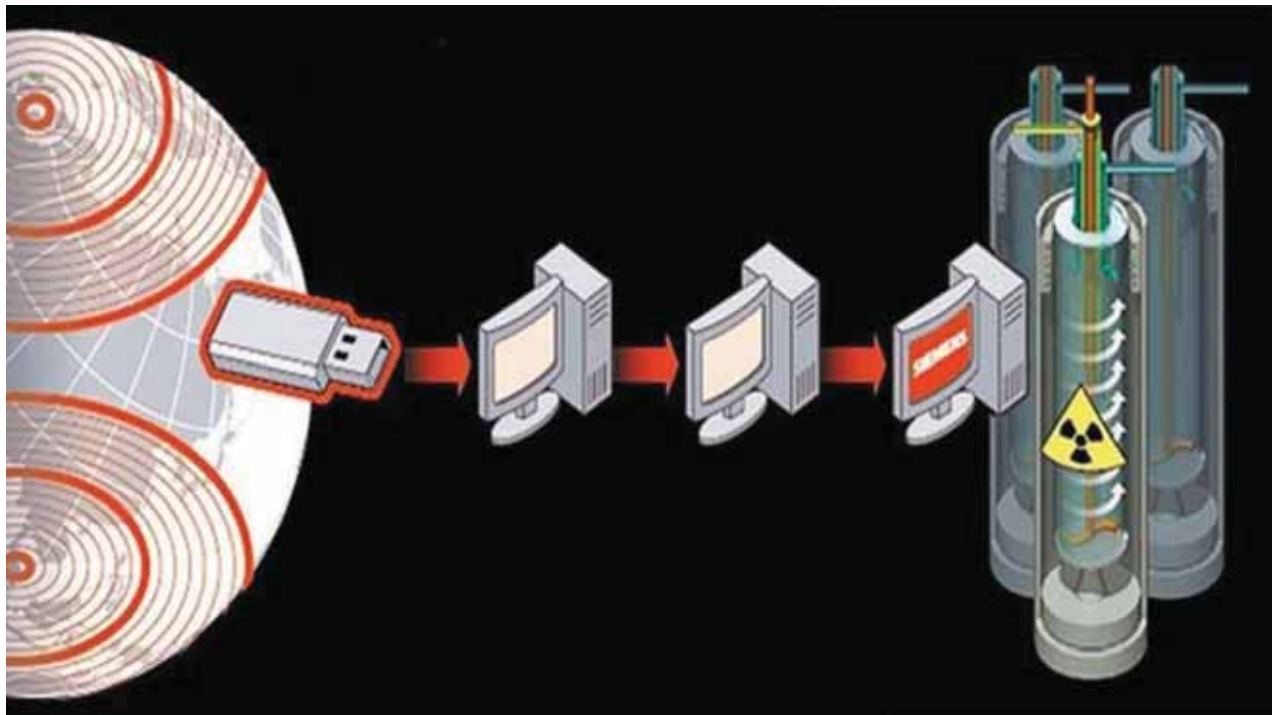
Precision is the key



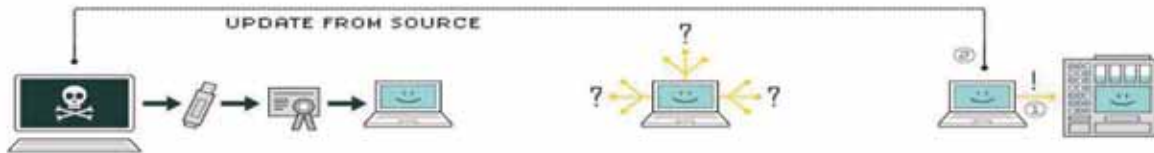
Absolute Game Changer



Outstanding Coding and Testing



HOW STUXNET WORKED



1. infection

Stuxnet enters a system via a USB stick and proceeds to infect all machines running Microsoft Windows. By brandishing a digital certificate that seems to show that it comes from a reliable company, the worm is able to evade automated-detection systems.

2. search

Stuxnet then checks whether a given machine is part of the targeted industrial control system made by Siemens. Such systems are deployed in Iran to run high-speed centrifuges that help to enrich nuclear fuel.

3. update

If the system isn't a target, Stuxnet does nothing; if it is, the worm attempts to access the internet and download a more recent version of itself.



4. compromise

The worm then compromises the target system's logic controllers, exploiting "zero day" vulnerabilities—software weaknesses that haven't been identified by security experts.

5. control

In the beginning, Stuxnet spies on the operations of the targeted system. Then it uses the information it has gathered to take control of the centrifuges, making them spin themselves to failure.

6. deceive and destroy

Meanwhile, it provides false feedback to outside controllers, ensuring that they won't know what's going wrong until it's too late to do anything about it.

This recent undated satellite image provided by Space Imaging/Inta SpaceTurk shows the **once-secret Natanz nuclear complex** in Natanz, Iran, about 150 miles south of Tehran.





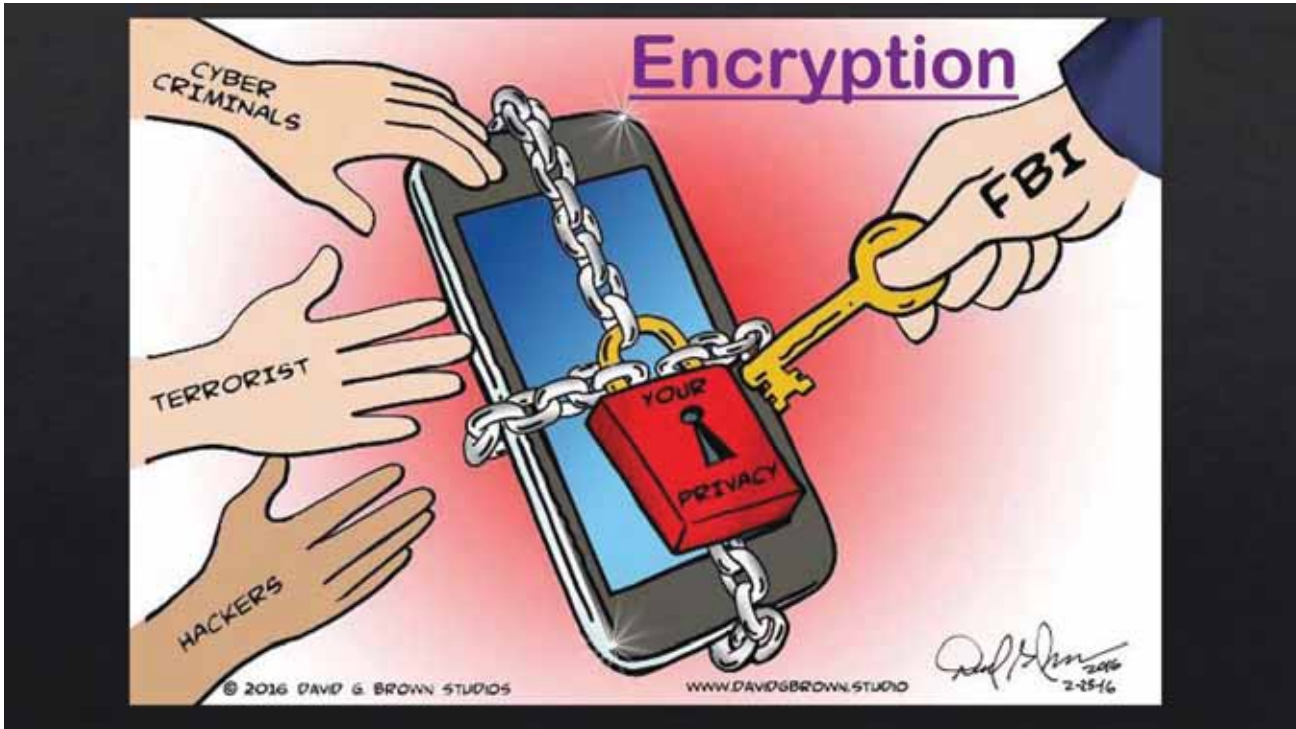
OUTAGE ALERT



The City of Atlanta is currently experiencing outages on various customer facing applications, including some that customers may use to pay bills or access court-related information. Our @ATL_AIM team is working diligently with support from Microsoft to resolve this issue. Atlantaga.gov remains accessible. We will post any updates as we receive them. Thank you for your patience.

Baltimore





Fortune 500 companies

97% has been hacked!

Internet of things!

Global Information Grid

A very vulnerable one!

Cloud

the most happening place

How secure are we?

Cloud Computing

Results of IDC survey ranks **Security**
74.6% as the biggest challenge

Web of Profits

Global Cyber Crime is worth \$1.5 trillion a year

- ❑ \$ 860 bn from illicit / illegal online markets
- ❑ **\$ 500 bn from intellectual property thefts**
- ❑ \$ 160 bn from data trading
- ❑ **\$ 1.6 bn from crimeware - as - a - service**
- ❑ \$ 1bn from ransomware

Web of Profits

- ❑ Platform Criminality mirroring platform capitalism of the companies like Uber & Amazon where data is the commodity
- ❑ **From business to economy**
- ❑ Legitimate / illegitimate intertwined
- ❑ **Money laundering, drugs, trafficking & terrorism**



“If builders built buildings the way programmers wrote programs, then the first woodpecker that came along would destroy civilization.”

-Weinberg's Second Law

Weakest link

The human factor!



Insider Threat



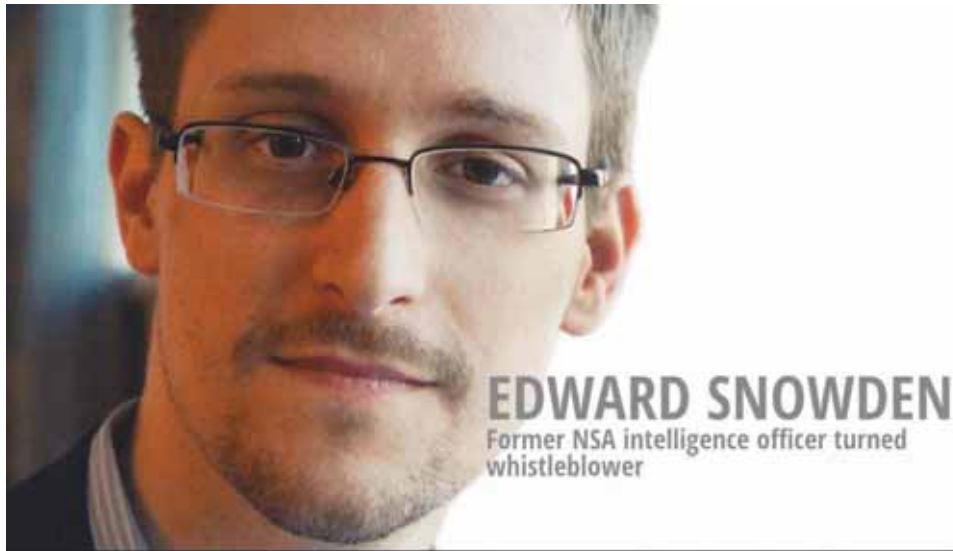
Insider Threat



Do we work on it?



The lone wolves of the Cyber Age!



I
N
S
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R
S



Tough Challenge

The top 5 reasons why attacks are related to system hygiene or user knowledge.



- 1 End user didn't think before clicking
- 2 Weak password/default password in use
- 3 Insecure configuration
- 4 Use of legacy or un-patched hardware or software
- 5 Lack of basic network security protection

Where should you start?

These three controls can help you address the top vulnerabilities and begin to reduce risk.



Build a
risk-aware
culture



Automate security
hygiene & manage
incidents with
intelligence

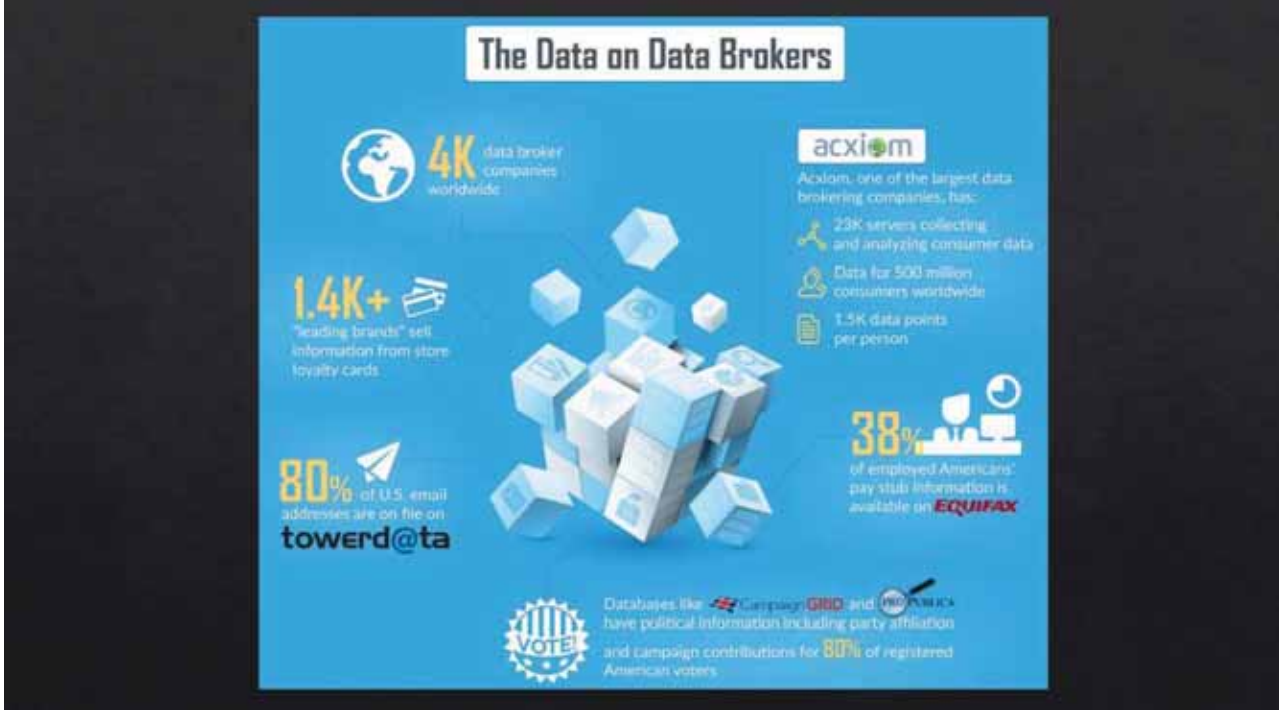


Protect the
network &
end-points

the battle for data...

DATA

Data Brokers



What the System Ought to Provide



Ubiquitous Surveillance

Military - Internet Complex
Corporate

Surveillance

Govt / Business Corporations

- Covert**
- Automatic**
- Ubiquitous**

FBI

VS



Internal Security
External Security
Counter Terrorism
Rogue States
Cyber War
Money Laundering
Underworld
Underground Economy
Naxalism
Data Brokers
Hacktivists

World at crossroads...



World at crossroads...

And the **IT companies themselves!!!**

Privacy has **no meaning**

More data, **more** money!

Everything **for a price**



mobile technology
CRIME
social media corporates
ESPIONAGE
cyber warfare
WikiLeaks
spies
ISPs
anonymization
data retention

hacker

social engineering
net neutrality
deception
software piracy
law enforcement
press freedom
POWER
state control
civil liberties



HACKTIVISTS



Knowledge Is Free.
We Are Anonymous.
We Are Legion.
We Do Not Forgive.
We Do Not Forget.
Expect Us.



VS

ISIS

The Malware Story

- Criminals & Virus writers outinnovating and outmaneuvering the anti-virus industry**
- First information**
- Detection rate**
- “time – to – detection lag”**
- “out of their leagues in their own game”**

Asymmetric Warfare – A new form

the costing

- 2009 Iraq-\$45 billion drone and satellite surveillance system**
- Skygrabber-\$25.95**



Attribution



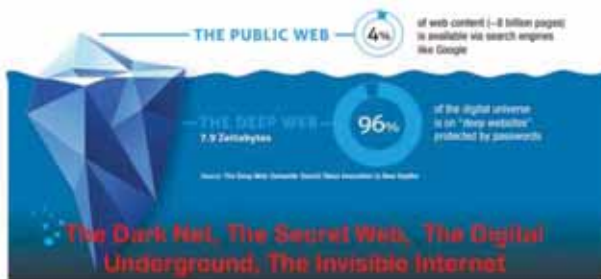
MLAT

BUDAPEST COVENTION



Digital Underground

The Deep Web



Underground Online Markets



The Dark Net

The Deep Web



Shop by category:

- Drugs(742)
- Cannabis(237)
- Ecstasy(32)
- Dissociatives(11)
- Psychedelics(123)
- Opioids(54)
- Stimulants(65)
- Other(111)
- Benzos(60)
- Lab Supplies(9)
- Digital goods(72)
- Services(56)
- Money(63)
- Weaponry(17)
- Home & Garden(8)
- Food(4)
- Electronics(2)
- Books(53)
- Drug paraphernalia(25)
- XXX(32)
- Medical(2)
- Computer equipment(5)
- Art(1)
- Apparel(6)
- Musical Instruments(1)
- Tickets(1)
- Forgeries(13)



5 x 36 MG RITALIN/CONCERTA I
\$9.62



1/4-Oz (7g) Purple Kush
\$15.00



Forensics, Investigation books
\$0.21



Hunter S. Thompson-Fear And Loathing...
\$0.13



5ml. HOPS RESIN (oleoresina lupulinae)
\$1.52



\$50 Aussie Note! For Bitcoin high...
\$9.82



St. John's Wort Tea Bags - set...
\$1.26

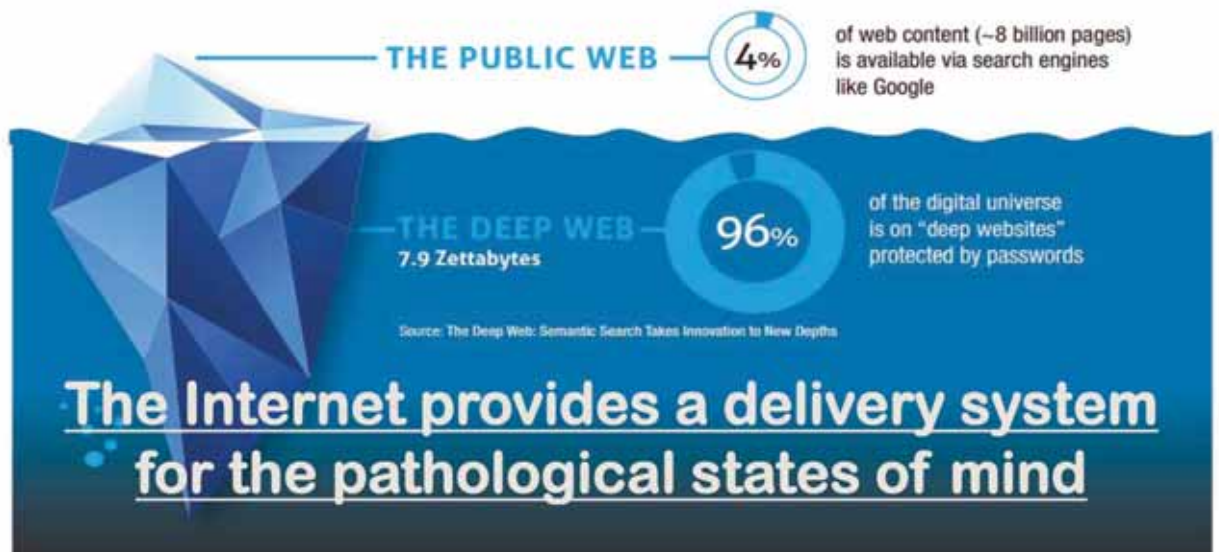


1/8oz. (3.5g) Medical Grade Co-Op...
\$8.21



Test bags of speed paste- 0.5g...
\$1.33

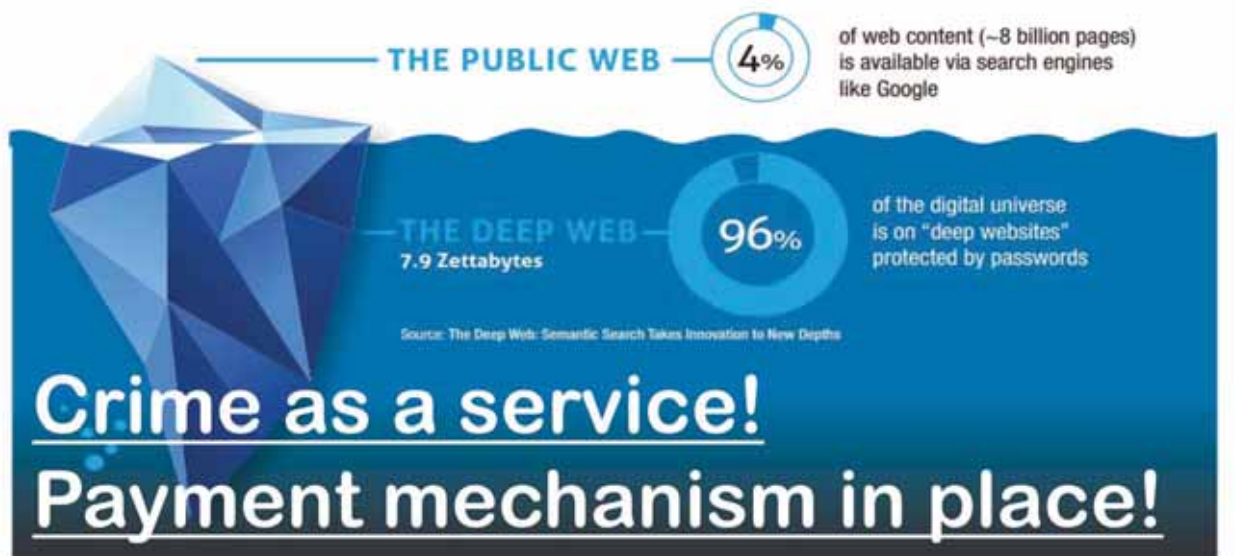
The Deep Web



The Deep Web



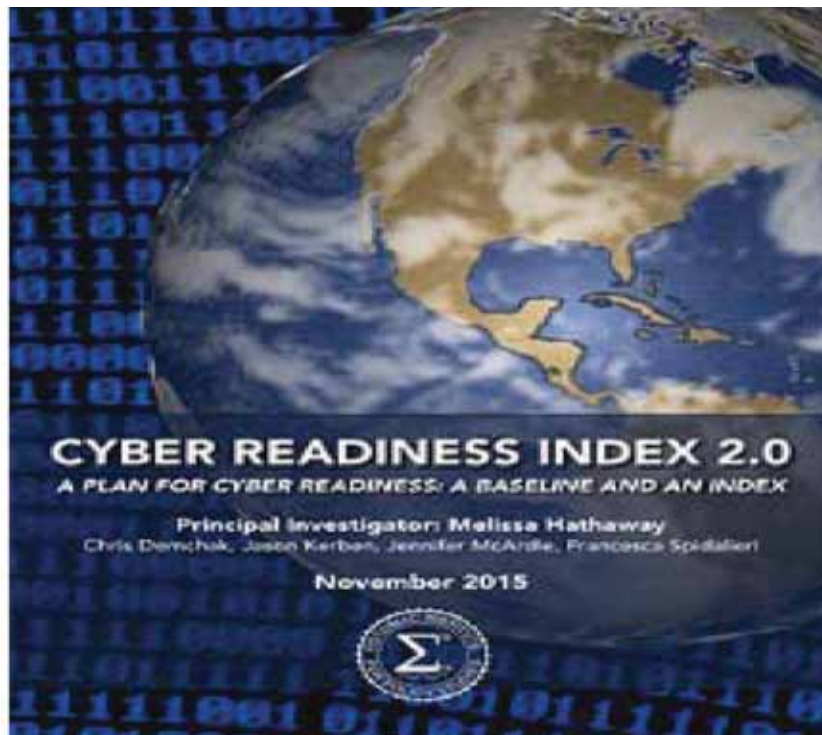
The Deep Web



Where will the **Cyber Security Professionals** come from?

**D
A
T
A**





Indicators

- Articulation & publication of a National Cyber Security Strategy**
- Does the country have an operational Computer Emergency Response Team (CERT) or Cyber Security Incident Response Team (CSIRT)**
- Has the country demonstrated commitment to protect against cyber crime**

Indicators

- Does the country have an information sharing mechanism**
- Is the country investing in cyber security basic & applied research & funding cyber security initiatives broadly**

CYBERSECURITY

- Standards
- Uniformity
- Certification
- Audit

CYBERSECURITY

- Hardware
- Software
- Network
- Data Center
- Cloud



How much of cyber crime investigation we are equipped to handle?

Silk Road Investigation

San Bernardino Case



WannaCry

Petya





Only Hands On is On!

**The bad
guys are
smart, well
equipped,
and
determined.**

**There's no
reason
that the
good guys
can't be the
same !!!.**

The way forward

As Steve Job's said we are at the crossroads of technology and humanities. **Technology is racing to become the mankind's DNA.** Transformational changes demand **transformational answers.** Digital is the only way forward. What matters is grey matter in a **knowledge driven world.** Together we can and together we will find a method in the digital madness.



SECURITY SHOPPE (INDIA) PVT. LTD.

MINI REMOTE OPERATED VEHICLE (MROV)

The Mini ROV is able to carry out EOD and Surveillance of the following structure/installations:

- Inside aircraft and train
- Building and installations
- Bus Station/Metro Station/ Rly Station
- Passenger Terminal
- On Ferries and Ships
- Exterior and Interior of Vehicle



MODEL:- NEPL-RAPTOR

SECURITY SHOPPE (INDIA) PVT LTD

Key Features of Mini ROV



- Weight - Less than 100 kg including the Mini ROV base station.
- The Mini ROV is able to climb stairs with weight of 8 kg.
- Operates in all types of weather conditions.
- The Telescopic Boom of Mini ROV extends from 01 to 2.5 meters with customized modular lengths available.
- Modular mounts available for weapon systems (MPS & Shot Gun), De-Arm Disrupter, RTVS (capable to take X-Ray with RTVS).
- Wireless Radio control up to 500m (open) & 200m (urban).

SECURITY SHOPPE (INDIA) PVT LTD

Range- R 2D Link – Through Wall Radar

Key Features

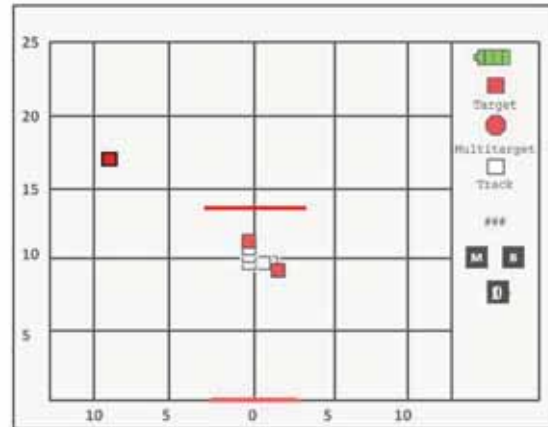
- Portable, handheld, battery-operated through wall radar
- Detects targets through walls constructed of common building materials.
- Locates the range and bearing on multiple targets in REAL TIME
- Confirmation on both moving targets and stationary targets
- Detection range of 20+ meters
- Operational weight of just 1.6 Kg
- Waterproof and ruggedized to MIL-STD 810G



SECURITY SHOPPE (INDIA) PVT LTD

Range- R 2D Link – Through Wall Radar

- Disposition of First wall and Second to identify the actual size of the room
- Field Of View
 - ❖ 180° in Wall Mode
 - ❖ 90° in Stand Off Mode
- Zooming Feature
- Operation Recording Capability for further training and Analysis
- Capability to alert user "Blocked" in case Metallic Barrier



Screen Display

SECURITY SHOPPE (INDIA) PVT LTD

MTL – DS

Multi Threat Locator – Dual Sensor

GROUND PENETRATING RADAR (GPR)

- **Dual Sensor having Patented Technology – Stepped Frequency GPR and Continuous Wave Metal Detector**
- High Level Detection and **Target identification**
- **GPS Tagging** with Google Earth Display for pinpoint target location.
- In field Target Learning (Mines, UXO, IEDs, Clutter, etc.)
- Target detection (Explosives) at depth of more than One Meter without any metal content in it
- Hot Soil Rejection



SECURITY SHOPPE (INDIA) PVT LTD

Key Features of MTL-DS (GPR)

- Ability to plot the threat on LCD screen in Real Time.
- Provides accurate threat position as well as depth information of buried objects.
- Automatic Terrain Learning
- Unique Audio Recording & Labeling of targets and identification of target as & when the same target is found in due course without digging.
- Operational Weight – Less than 5 Kg
- MIL STD 810 F/G

Touch-screen snapshot



SECURITY SHOPPE (INDIA) PVT LTD

NOVO Defender – Real Time Viewing System (RTVS)

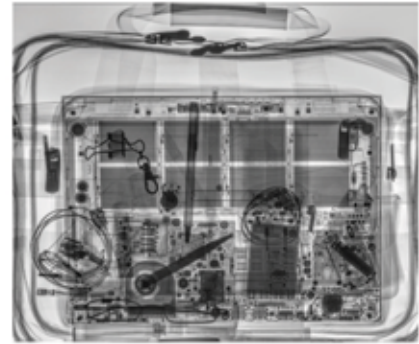
- High Image Quality : **16-bit Latest Generation**
- Incredible detailing and high penetration capabilities
- Cutting Edge drop tested Detectors: **Thinnest, Lightest and most Durable**
- The NOVO's proprietary software developed to provide the best user experience and functionality in harsh & extreme field operations.
- Wireless as well Wired operation modes . Wireless Communication up to 250 mtrs (LOS)
- Built in tools such as
 - ❖ Genie Enhancement Feature (single touch operation)
 - ❖ HDR (High Dynamic Range Images)
 - ❖ Stitching Feature- Manual and Automatic



SECURITY SHOPPE (INDIA) PVT LTD

NOVO Defender – Real Time Viewing System (RTVS)

- Penetration over 3.3 Inches
- MIL STD 810 F/G, IP -65 Toughpad display
- Golden Pulse X-Ray Source: safest in the world
- Organic / Inorganic Detection Capability
- NOVO's system can be channelled through the robot



➤ Applications

Security



E.O.D & I.E.D



Special Forces



Customs



Counter Surveillance



Border Control

SECURITY SHOPPE (INDIA) PVT LTD

OSCOR Green – RF Detector

- Portable RF (Radio Frequency) Detector having scanning speed of 24 GHz / sec for detecting unknown, illegal, disruptive transmissions across a wide frequency range.
- An ideal product for Security Surveys and Eavesdropping detection.
- Capability to listen to audio / video transmission in RF range with feature to locate the transmitters



SECURITY SHOPPE (INDIA) PVT LTD

Capability – OSCOR Green

- Comes with Multi Purpose Probe (MPP) to detect low frequency bugs like
 - ❑ Carrier Current Bug
 - ❑ Visible Light Bug
 - ❑ Infra Red Bug
 - ❑ Coaxial Bug inside the TV set top boxes.

➤ Applications

- ❖ Counter Surveillance Intelligence Protection
- ❖ VIP Protection
- ❖ Surveillance Equipment Detection
- ❖ Electronic Surveillance Detection



SECURITY SHOPPE (INDIA) PVT LTD

TALAN – Telephone and Line Analyzer



- TALAN detects any information leakage on both digital and analog as well as Voice Over IP (VOIP) telephone systems.
- TALAN provides the capability to perform multiple tests to analyse communication lines for eavesdropping devices.
- Capable to demodulate the digital software of most of the telephone exchanges in the world.
- Determine if a digital phone line is passing audio when it should not.

SECURITY SHOPPE (INDIA) PVT LTD

Functioning of TALAN

- Frequency Domain Reflectometer (FDR) to check the taps on the telephone line.
- Non-Linear Junction Detection (NLJD) to detect any electronics connected on telephone Line

➤ Applications

- ❖ Technical Surveillance Countermeasures (TSCM)
- ❖ Wire Tap Detection
- ❖ Intelligence Protection
- ❖ VIP Protection



SECURITY SHOPPE (INDIA) PVT LTD

Orion 900 – Non Linear Junction Detector

- Detects and locate explosives (RCIED) having electronic circuitry whether electronic is switched on or off.
- Digitally modulated spread spectrum transmit signal provides increased detection range.
- Auto power Controlled device doesn't activate any RCIED in close proximity.
- Power output not greater than 4 watts , safe for user.
- Light weight equipment for long hour operations without getting fatigue .
- Adjustable Digitally Signal Processing Gain.



SECURITY SHOPPE (INDIA) PVT LTD

Orion 900 – Non Linear Junction Detector

➤ 2nd & 3rd harmonic response in form of different coloured LED and different audio.

➤ TELESCOPIC POLE for Searching in ceilings and walls.

➤ Applications

- ❖ To secure areas for hidden or prohibited electronics with explosives (RCIED).
- ❖ To Search cell phones or other electronic contraband in PRISON facilities.
- ❖ To sanitize corporate board rooms or offices for unauthorized or hidden electronics.



SECURITY SHOPPE (INDIA) PVT LTD

XPOSE – Contraband Detector

➤ XPOSE Contraband Detectors searches with high penetration capability for hidden contrabands such as ;

- Drugs
- Explosives
- Radiation sources
- IEDS

➤ Contrabands covertly hidden in areas like

- Vehicle Frames
- Tires
- Fuel Tanks
- Luggage



SECURITY SHOPPE (INDIA) PVT LTD

XPOSE – Contraband Detector Capabilities

- Faster response with increased penetration.
- Easy to read LCD display shows difference in number, Graph and with audio alert.
- Light weight one hand touch operations.
- Remote operation capability with Extender pole to reach inaccessible areas.

➤ Applications

❖ The vital intelligence helps assured operation by;

- Border control Teams
- Law Enforcement Agencies
- Custom Officials
- Police Departments
- Anti Narcotics Cells



SECURITY SHOPPE (INDIA) PVT LTD

QS (Quantum Sniffer) – H150 – Explosive Detector

- Detects Military , commercial and Homemade Explosives in Seconds
- Patented heated Vortex collector with Non-Radioactive ION Spectrum Technology
- **Choice of Sampling modes**
 - ❖ Non Contact Particulate and Vapour Detection
 - ❖ Wipe Sampling
- Patented Incal Automatic Calibration system
- Rapid Clear down
- Single Hand Operation



SECURITY SHOPPE (INDIA) PVT LTD

QS (Quantum Sniffer) – H150 – Explosive Detector

- Low Operational and Maintenance Cost as consumable costs are minimised
- Presence of Threat indicated by visual and audio alarms
- Substance Identification displayed on LCD Screen
- Additional Substances can be saved in the user expandable detection Library



SECURITY SHOPPE (INDIA) PVT LTD

Thank You

Security Shoppe India Private Limited

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Bhikaji Cama Place, New Delhi -110066

Tel: 011 - 26169370, 26170687

Fax: 011 - 26168840.

Cell: 98187 26786, 9999341455

Email: info@securityshoppeindia.com,
sales@securityshoppeindia.com

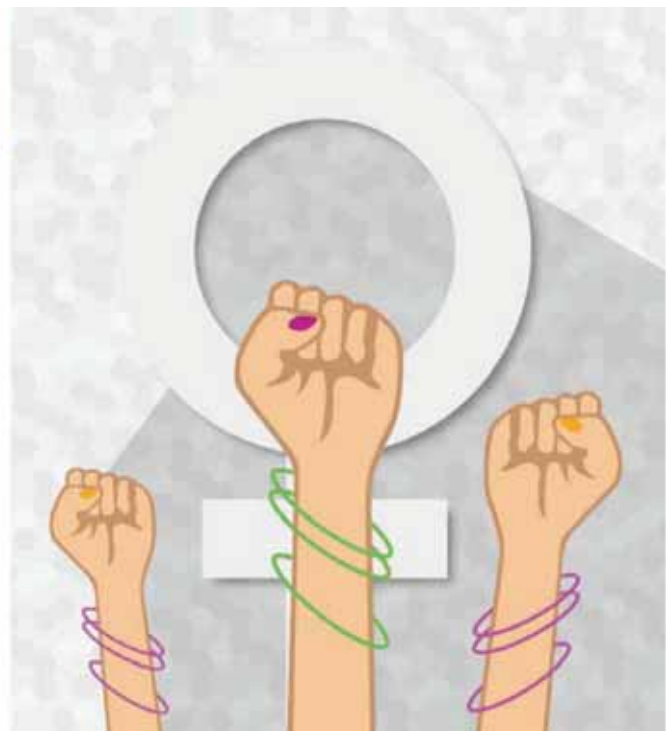
SECURITY SHOPPE (INDIA) PVT LTD

PREDICTING CYBER CRIME AGAINST WOMEN: IS IT POSSIBLE?



CYBER CRIME AS PER IT ACT

□ Cyber crime refers to all the activities done with criminal intent in cyber space or using the medium of Internet. These could be either the criminal activities in the conventional sense or activities, newly evolved with growth of the new medium. Any activity, which basically offends human sensibilities, can be included in the ambit of Cyber Crime.



❑As Internet usage is growing daily the world is coming closer. However, it has also managed to create a problem for people who spend long hours browsing the Cyber World – which is cyber crimes.

❑As the name implies, cybercrime is a technologically advanced iteration of traditional crime taking place in the virtual world.

❑Cybercrime has become the biggest threat to digital information, causing reputational and financial damage to businesses and consumers around the globe



CYBER-CRIME AGAINST WOMEN: STATISTICS



CYBER-CRIME AGAINST WOMEN

❑ Cyber Harassment:

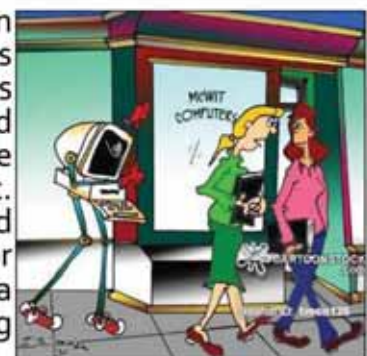
- It is very similar to harassing through letters. Harassment includes blackmailing, threatening, bullying, and even cheating via email. E-harassments are similar to the letter harassment but creates problem quite often when posted from fake ids.



CYBER-CRIME AGAINST WOMEN

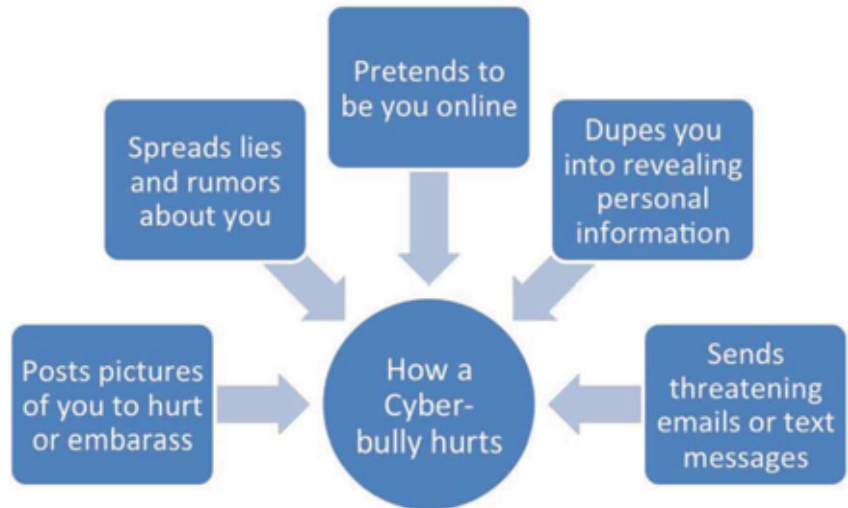
❑ Cyber Stalking:

- It is one of the most talked about net crimes in the modern world. Cyber stalking involves following a person's movements across the Internet by posting messages (sometimes threatening) on the bulletin boards frequented by the victim, entering the chat-rooms frequented by the victim, constantly bombarding the victim with emails etc. Cyber Stalking usually occurs with women, who are stalked by men, or children who are stalked by adult predators or pedophile's. Cyber stalkers target and harass their victims via websites, chat rooms, discussion forums, open publishing websites (e.g. blogs and Indy media) and email.



CYBER-CRIME AGAINST WOMEN

☐ Cyber Bullying



CYBER-CRIME AGAINST WOMEN

☐ Cyber Pornography

It is the other threat to the female netizens. This would include pornographic websites; pornographic magazines produced using computers and the Internet.

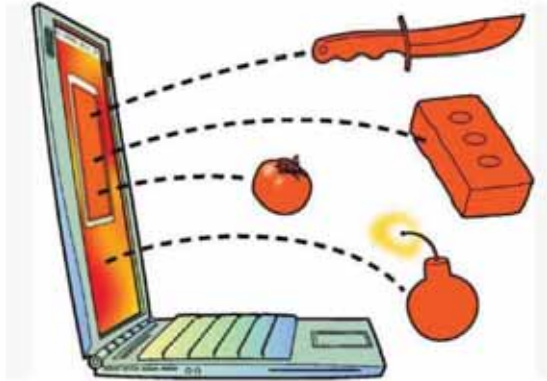
Another great disadvantage with a media like this is its easy availability and accessibility to children who can now log on to pornographic web-sites from their own houses in relative anonymity and the social and legal deterrents associated with physically purchasing an adult magazine from the stand are no longer present. Furthermore, there are more serious offences which have universal disapproval like child pornography and far easier for offenders to hide and propagate through the medium of the internet.



CYBER-CRIME AGAINST WOMEN

□ Cyber Defamation:

Cyber tort including libel and defamation is another common crime against women in the net. This occurs when defamation takes place with the help of computers and / or the Internet. E.g. someone publishes defamatory matter about someone on a website or sends e-mails containing defamatory information to all of that person's friends.



CYBER-CRIME AGAINST WOMEN

□ Email spoofing:

- A spoofed e-mail may be said to be one, which misrepresents its origin. It shows its origin to be different from which actually it originates. A review in the CyberlawTimes.com shows that India has crossed the danger mark in cyber crime targeting women and children. The goal of email spoofing is to get recipients to **open**, and possibly even **respond** to, a **proposal**.
- The more common method used by men is to email vulgar photographs of themselves to women, praising their beauty, and asking them for a date or inquiring how much they charge for 'services'. Besides sending explicit messages via e-mail, SMS and chat, many also morph photographs - placing the victim's face on another, usually nude, body.



CYBER-CRIME AGAINST WOMEN

❑ Matrimonial Scams:

Many matrimonial sites display **wrong information** to misguide visitors, seek dowry and offer dating services. These scams are on the rise and constitute a **major proportion** of cyber crimes in India. In **2015** there has been a **207%** rise in Online Matrimonial Scams. These scams involve **perpetrators** who approach the victim with a marriage proposal on online portals and furnish **fake data**.



RECOMMENDATIONS

For the Government:

- ❑ Encourage women to report when criminals violate their rights online.
- ❑ Ensure the Cyber Crime Prevention against Women and Children is accessible via mobile internet as an app that functions even where bandwidth is low. Ensure that users' privacy is protected and that they are not subject to monitoring.
- ❑ Implement the law against individuals responsible for inciting and carrying out online violence against women and marginalized communities, regardless of their political or religious agenda.
- ❑ Propose Cyber Cells with latest technologies to ensure the truth comes to light with minimum time frame

RECOMMENDATIONS

For Law Enforcement:

- Foster an environment in which individuals feel confident enough to report online abuse to authorities, even if this challenges cultural norms and takes time.
- Stop dismissing reports of sexualized or gender-based abuse because they take place on the internet.
- Educate Officers that the response to online harassment is not to stop the victim using the internet **BUT TO CONVICT THE PEOPLE RESPONSIBLE.**
- Inform officers about the laws that apply to online harassment, and how to direct complainants to appropriate legal recourse and Tools & Technology available to ensure Conviction!

CURRENT SCENARIO



INVESTIGATOR
KNOWS THE CASE BUT LACKS THE
NECESSARY TOOL FOR FURTHER
INVESTIGATION



LAB EXPERT
HAVE TOOLS AT HIS DISPOSAL BUT
LACKS ALL CASE INFORMATION AND
IS LOADED WITH CASES



- ❑ INVESTIGATORS NEED DIRECT & EASY ACCESS TO ALL DIGITAL EVIDENCE
- ❑ SEARCHING, DIGGING DEEP INTO THE DATA TO UNEARTH SOLID LEADS FROM DIGITAL DATA SOURCES IS TIME CONSUMING PROCESS AND RESULTS IN CRITICAL EVIDENCE BEING OVERLOOKED

“TIME IS ALWAYS OF ESSENCE”

Where we come into Picture?



Digital sources with huge data set.
Questions are:

- ❑ What do we look for?
- ❑ Where do we look for it?
- ❑ What is the time frame we are looking at?

“Data is available in the Digital Evidence you seize, we ensure you get to the relevant data in the minimum time frame with maximum effectiveness to ensure Conviction”

Cyber Intelligence Company
CYINT TECHNOLOGIES



**Why
Cyint ?**

Leading Digital Forensics Solution Providers in India

Core Technology Driven Company with Strong Customer Base in India

State-of-the-Art Digital Investigation Laboratory

World class Digital Forensic services

Known for Top Quality, Competitive Prices and Unmatched Support

Humans Keep Secret
Computers Don't!!



48 hours

If investigators don't have solid leads, suspects or arrests in that time, the chances of solving a case drop by half.

Limited resources create a challenge in leveraging this digital goldmine



Time to investigate



Tools to access & analyze data



Time to generate leads



Reduced headcount

To do more with less – you need to increase your productivity for the people you have

In addition, analysis barriers impact case cycle times



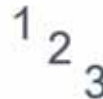
No centralized view of case data



Manual review and correlation of disparate data



Difficult to visualize patterns, connections and cross-reference data sets



Multiple iterations between the investigators and examiners



Advanced tools are complex and hard to use



WHERE TO LOOK AND HOW?

Digital intelligence solutions designed for your needs



Examiner
Process, decode and manage disparate digital data



Prosecutor
Collaborate, share and report on critical case data



Investigator
Access all digital data sources in one location



Command staff
Maximize investments with future-proof technology



Analyst
Merge large sets of disparate data to find patterns, trends



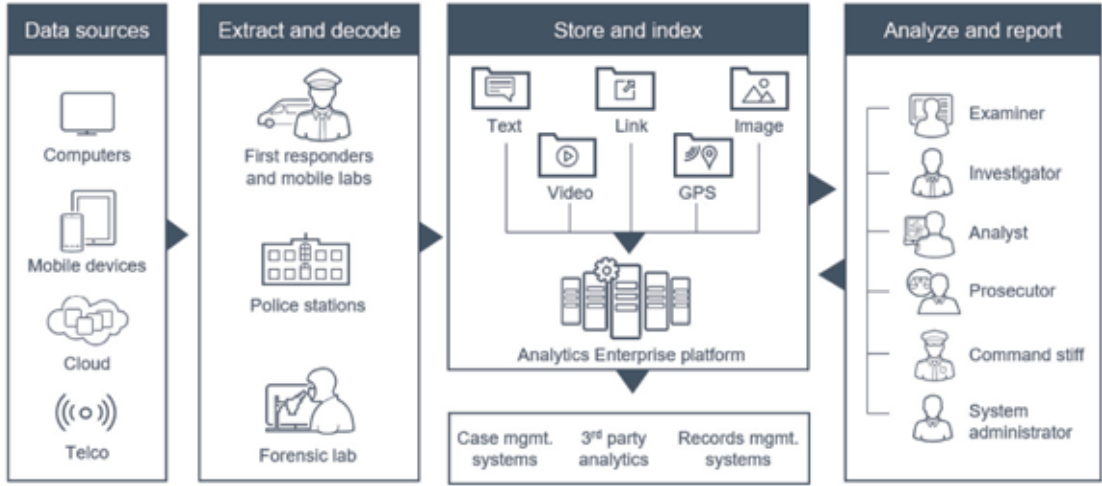
System administrator
Seamlessly manage data permission policies / SOPs



UFED Ultimate - key capabilities



Unified digital intelligence workflow





SOURCE 88

- WhatsApp: 5,536
- Telegram: 1,740
- Safari: 1,623
- Message +12127554: 611

LANGUAGES 29

- English: 85,108
- Unknown: 5,863
- German: 5,079
- Portuguese: 5,280

FILE TYPES 12

- Image: 47,261
- Configuration: 13,719
- Uncategorized: 11,459
- Text: 5,858

MEDIA TAGS 13

- Documents: 2,238
- Face: 2,540
- Maps: 1,419
- Car: 1,286

ENTITIES 13

- ORGANIZATION: 3,750
- URL: 3,750
- PERSON: 2,760
- LOCATION: 1,386

MEDIA TAGS 13

- Tattoo: 460
- Map: 363
- Nudity: 319
- Drugs: 267

- CASES: 9
- OWNERS: 33
- EXTRACTIONS: 33
- TYPES: 24
- PARTIES: 16,699
- IDENTIFIERS: 6,768
- GEODISTANCE: 0
- TAGS: 0
- WATCH LISTS: 0
- ENTITIES: 13
- LANGUAGES: 29
- MEDIA TAGS: 13
- SYSTEM TAGS: 4
- SOURCE: 88
- STATES: 5
- FILE TYPES: 12
- PRIORITY: 3
- HASH DATABASES: 1

The screenshot shows the 'Analytics Enterprise' interface. At the top, there are navigation tabs for 'Timeline', 'Graph', 'Map', and 'Gallery'. Below this is a search bar and a 'Faceted Filters' sidebar on the left. The main area displays a grid of image thumbnails. A date range selector is open, showing 'January 2017' and 'July 2017'. The interface includes various controls for filtering and viewing the data.



<https://forensic4cast.com/forensic-4cast-awards/2018-awards/>

4:cast 2018 Awards

Computer Forensics Software of the Year

• Magnet Axiom/IEF

WINNER
DIGITAL FORENSIC ORGANIZATION OF THE YEAR
Thank you all for your support!

2017
FORENSIC
4:CAST
AWARDS



BACKGROUND

Following an AMBER Alert for a missing-endangered child, police apprehend a male suspect and rescue his 14-year-old female victim. They learn that the suspect has crossed state lines to meet her for a prearranged tryst. Internet Crimes Against Children investigators obtain search warrants not just for his Samsung mobile device, but also for his home, workplace, and other electronic media in his hometown.

“During a child exploitation case, I was able to use Magnet IEF to paint the user’s intentions. Using parsed search results in combination with email artifacts, iNet cache results, and torrent files I was able to provide a picture of a user who was deliberately seeking contraband.”

—Computer Forensic Crime Analyst, Maricopa Co. Sheriff’s Office

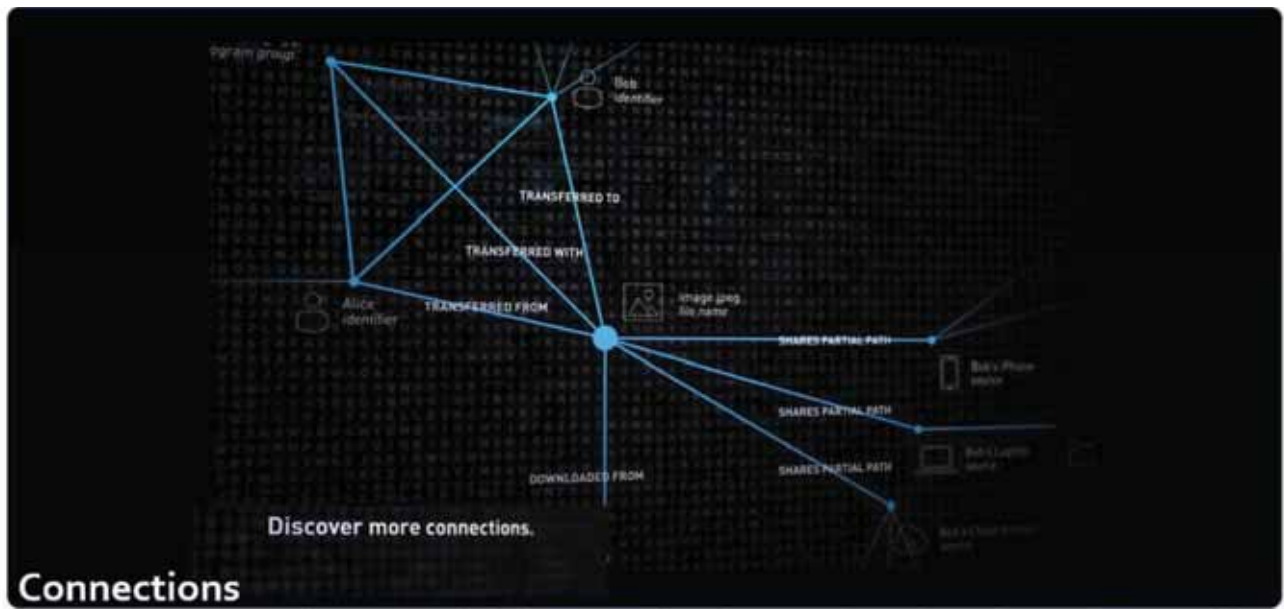
MAGNET AXIOM™

THE COMPLETE DIGITAL INVESTIGATION PLATFORM

Recover digital evidence from the most sources, including smartphones, cloud services, computers, IoT devices and third-party images.

Analyze all the data in one case file. Make sure no evidence is missed.

THE MOST COMPREHENSIVE, INTEGRATED DIGITAL FORENSICS PLATFORM



Connections

Don't spend hours manually uncovering links between artifacts, devices, and people - use Connections to quickly discover the full history of a file or artifact to build your case and prove intent. Connections in AXIOM visualizes where files came from, who they are connected to, and where they're stored.

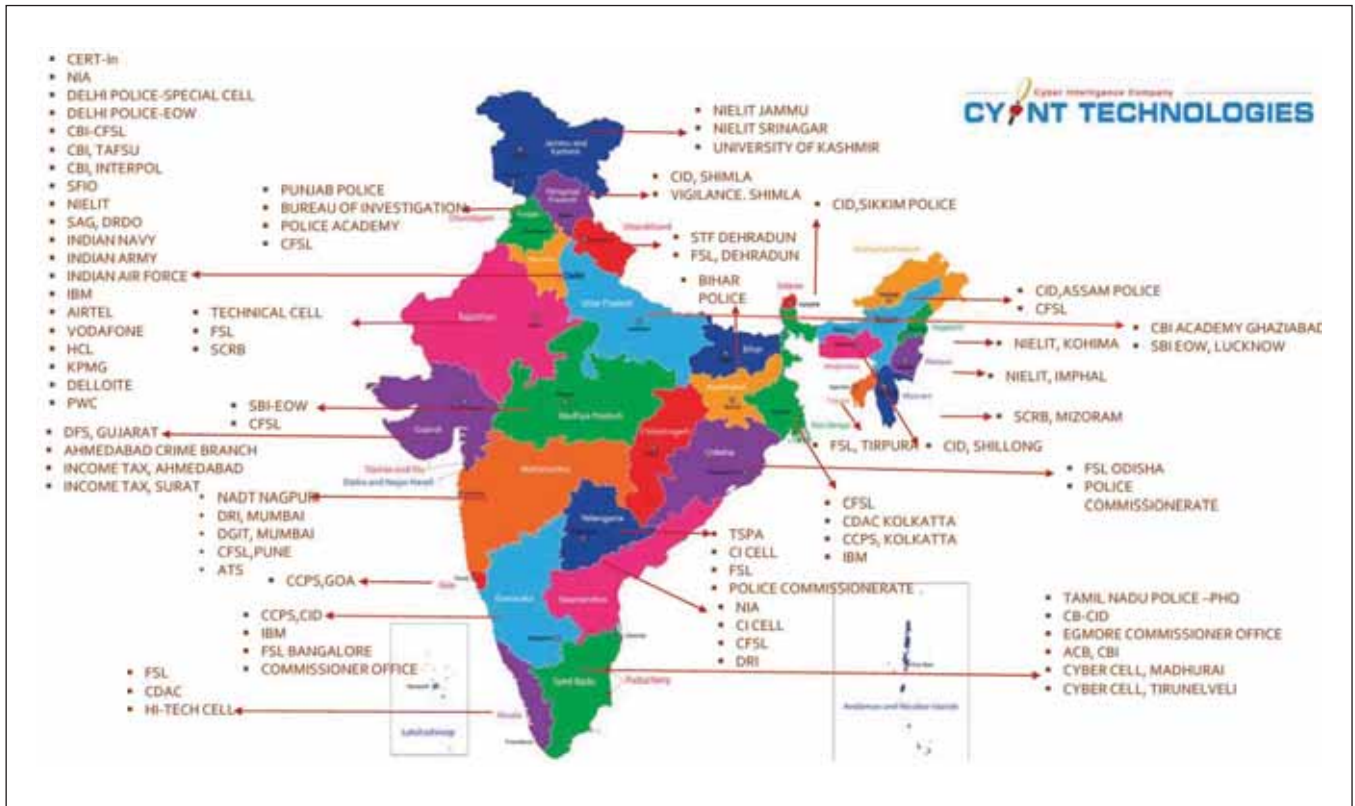
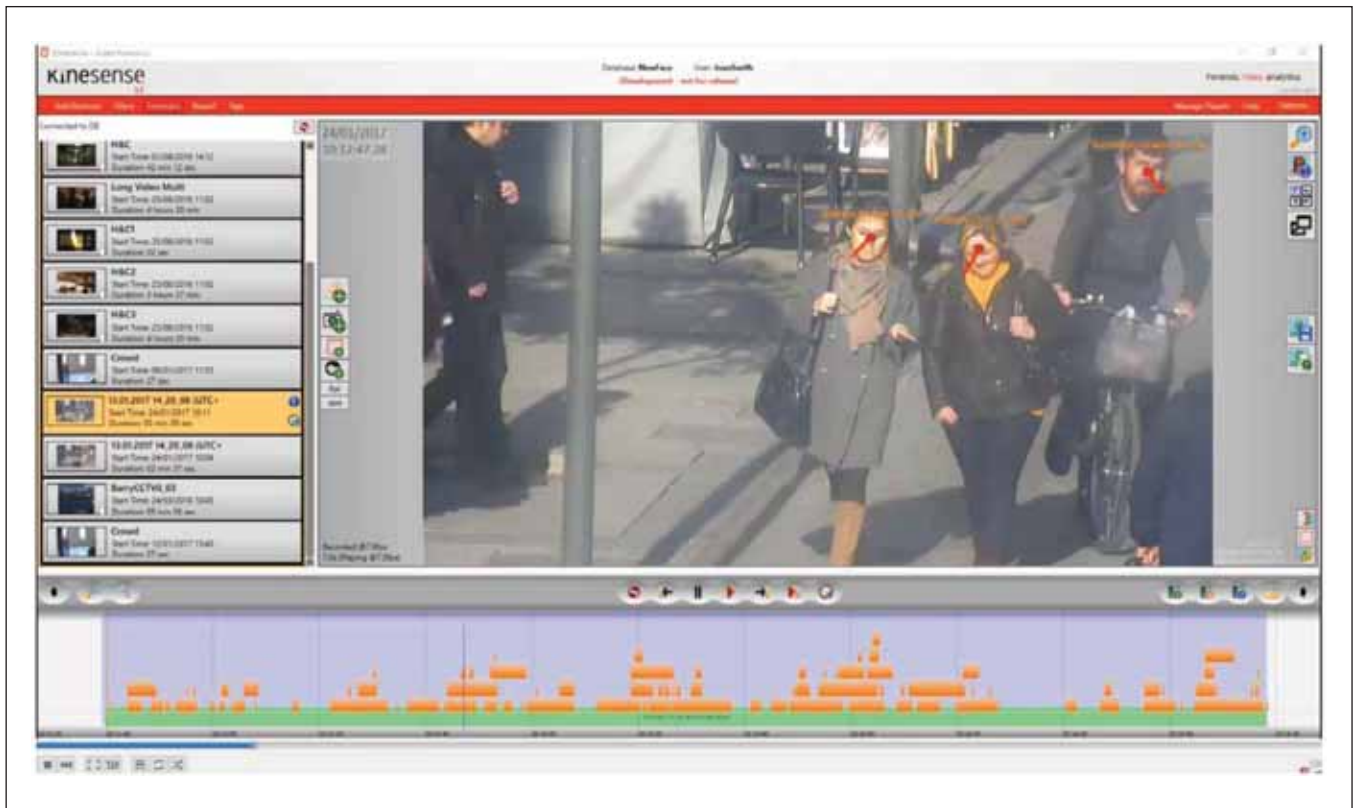
Kinesense
www.kinesense-vca.com

Kinesense Video Investigation
Platform with
Facial Recognition

"Combining world leading facial recognition technology with the Kinesense video investigation solution provides the most comprehensive and sophisticated video investigation solution for actionable intelligence faster"



vast hours
of review
and report
video footage

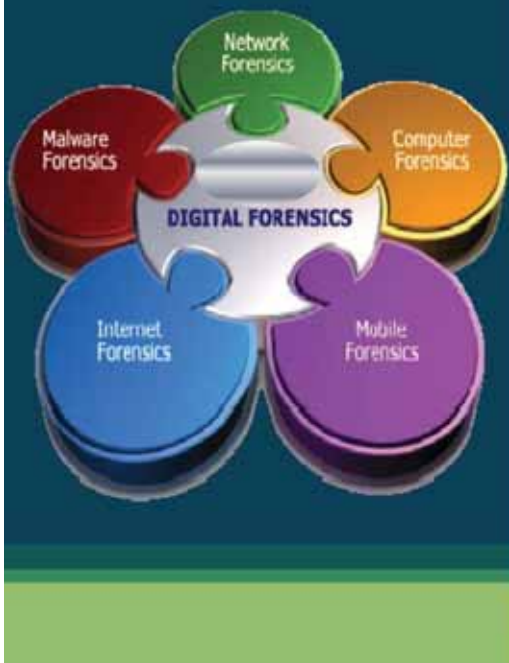




Digital Forensic

Samira Kumar Mishra
Scientist-'D'
NTRO

Digital Forensic



Digital forensics is considered to be the use of analytical and investigative techniques to identify, collect, examine, preserve and present evidence or information which is stored or encoded

Digital Forensics is defined as "the science of recovering digital evidence from a mobile phone/digital media under forensically sound conditions using accepted methods."

A better definition for law enforcement would be the scientific method of examining and analyzing data from digital storage **media** so that the data can be used as evidence in front of Court of Law.

Media = Hard-disk, memory cards, mobile phones, PDA, digital camera, etc.





Purpose of Digital Forensic

- Extracting complete and unaltered information from cell phones, smartphones, PDA etc.
- Analyzing extracted information and finding evidences.
- Preparing forensic reports that can be presented in a court.
- Proving data authenticity.

The Digital world of Forensics

- Mobile forensics
 - Computer Forensics
 - CDR Analysis
 - Image forensics, Face forensics
 - Video forensics
 - GPS devices forensics
 - Memory Devices forensics
 - Audio forensics
 - Video forensics
 - Network Forensics
 - Damaged media forensics



Handling of Digital Evidences by Forensic Analysts



Any digital information or artifacts that can be used as evidence.

Collect, observe and preserve the evidence

Analyze, identify and organize the evidence.

Rebuild the evidence or repeat a situation to verify the same results every time. Checking the hash value

Four major tasks for working with digital evidence



Where Are We Headed?

Network Technology Converging

- ❖ LTE Is New norm
- ❖ Usage of digital media and network penetration.
- ❖ Verity of digital devices.
- ❖ Proprietary Mobile Applications are now dominant.



Where Are We Headed?

It's a Smart Phone World, After-all

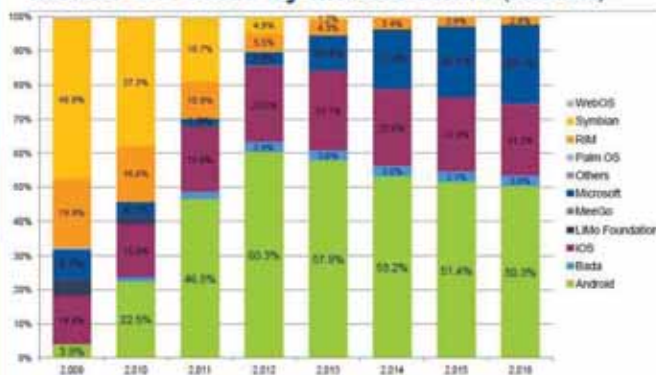
Smartphone Use:

- ❖ True Convergence Happening: Higher processor speeds,
- ❖ better apps,
- ❖ location services,
- ❖ more storage,
- ❖ social networking,
- ❖ broadband adoption.



Where Are We Headed?

Gartner Forecast Estimates Mobile OS Sales by Market Share (2009-2016)



Source: Gartner
Forecast: Mobile Devices by Open Operating System, Worldwide, 2009-2016, 2012 Update

Gartner

It's a Smart Phone -Everywhere

Android Sales In Worldwide
overtake iPhone

Android Grew 886% worldwide
year-over-year. (Canalysis)

Mobile Phones Evolution

8 years ago



Nokia 5110

Nowadays



Modern Smart phone

Dominant Mobile Operating Systems



Phones and Tablets

What Data is Obtainable?



Stored Information



Cell phone



Address book



Planner & Organizer



Messenger



Photo & Video camera



GPS navigator



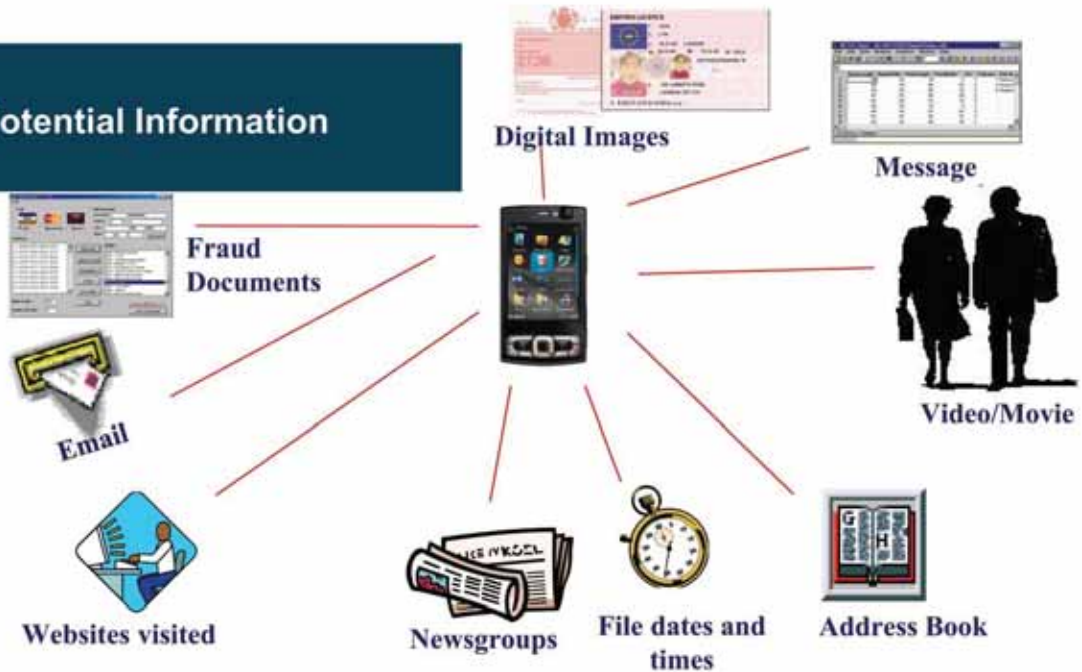
Web client



Platform for 3rd party apps



Potential Information



Different Domains

Extraction of data from

•Handsets

•Memory Cards

•Damaged handsets

➤ Password Recovery

➤ Analysis of extracted Data

➤ Video Forensics

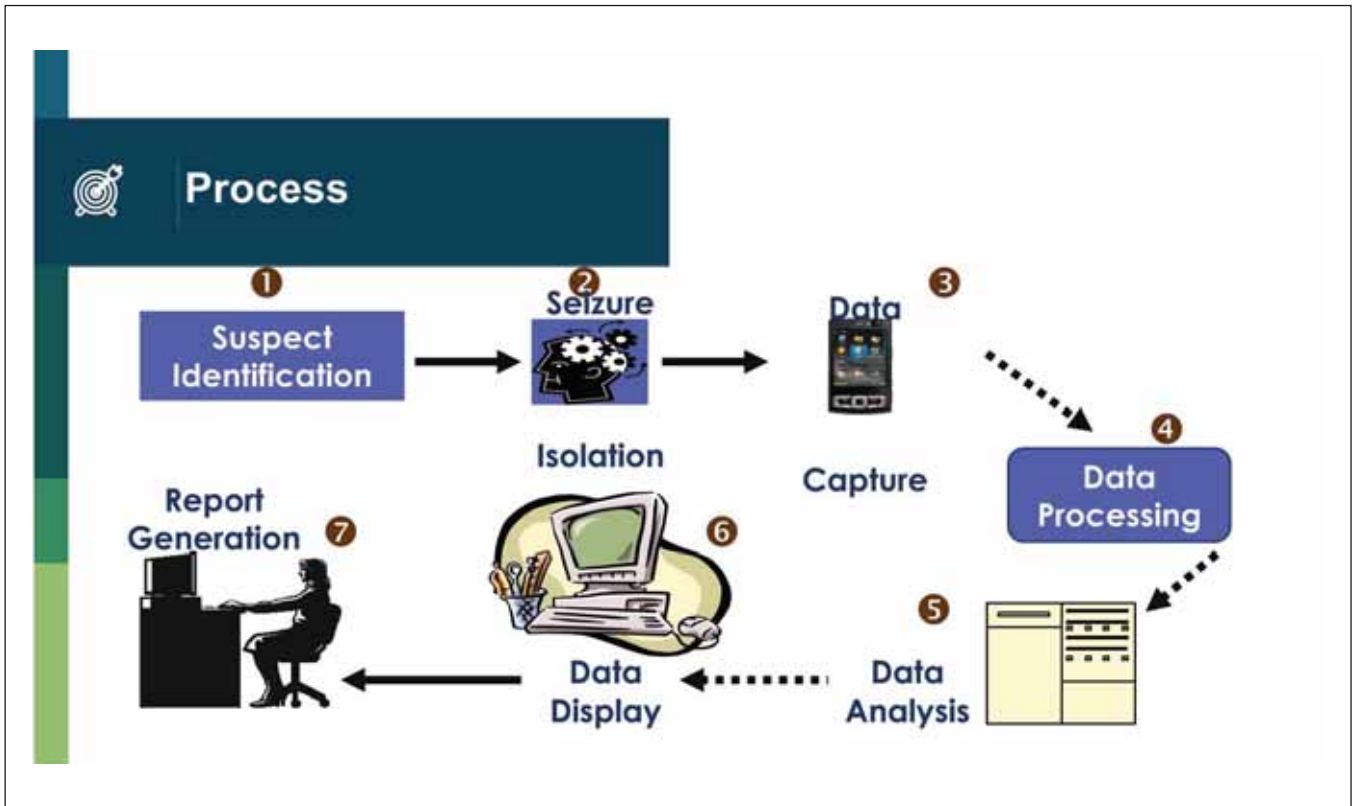
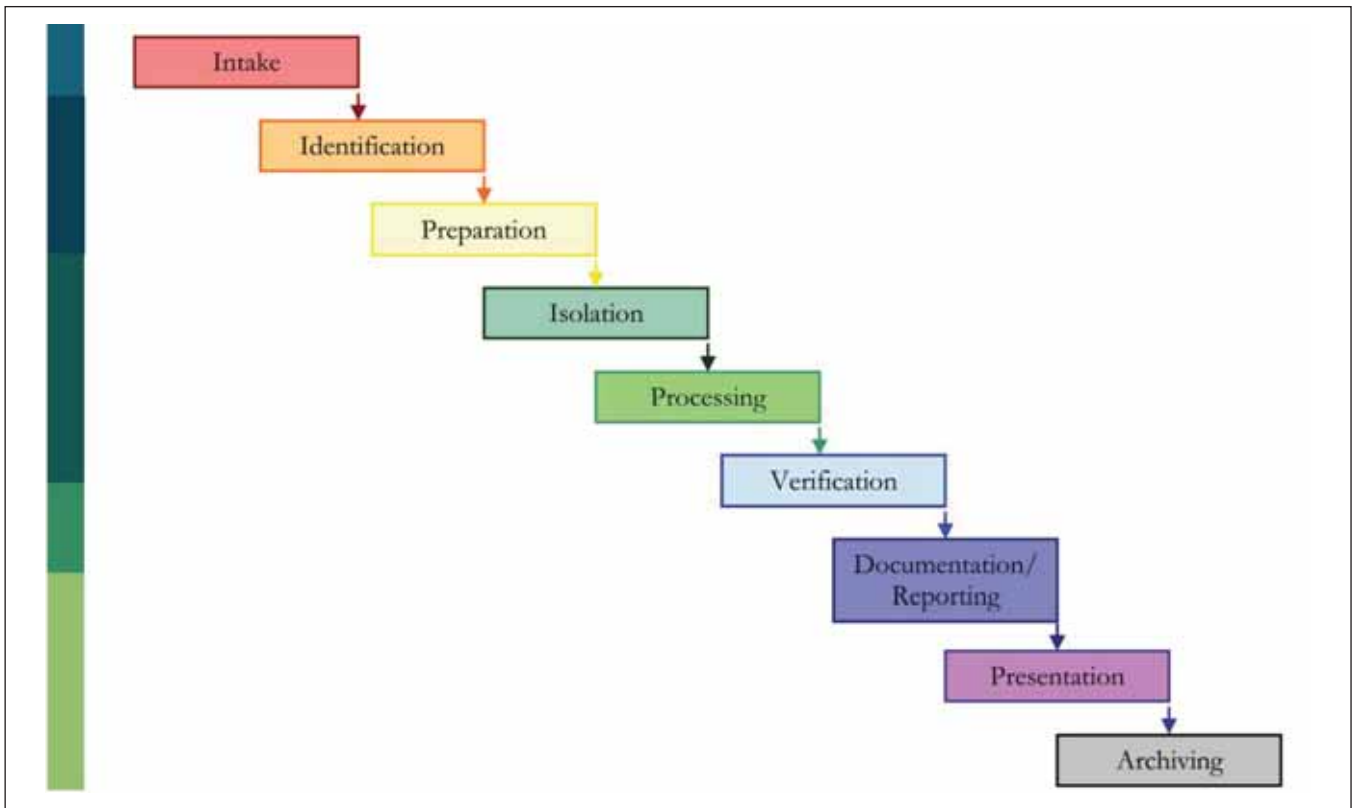
➤ Antiforensics

➤ Non standard Chinese handsets etc.

•SIM Cards

•Damaged SIM

•GPS & Handheld Devices





FARADAY CAGE

- Data on device resides in battery dependent volatile memory. Battery preservation by turning off the phone may activate or reset authentication codes.
- Phone receiving service vulnerable to remote access, remote data dump. High risk of data being overwritten, deleted, locked out or corrupted.
- Keeping the phone ON but isolated hastens battery drain.



RF Protection – Required to Protect Device From The Network.



Faraday Box and Bag



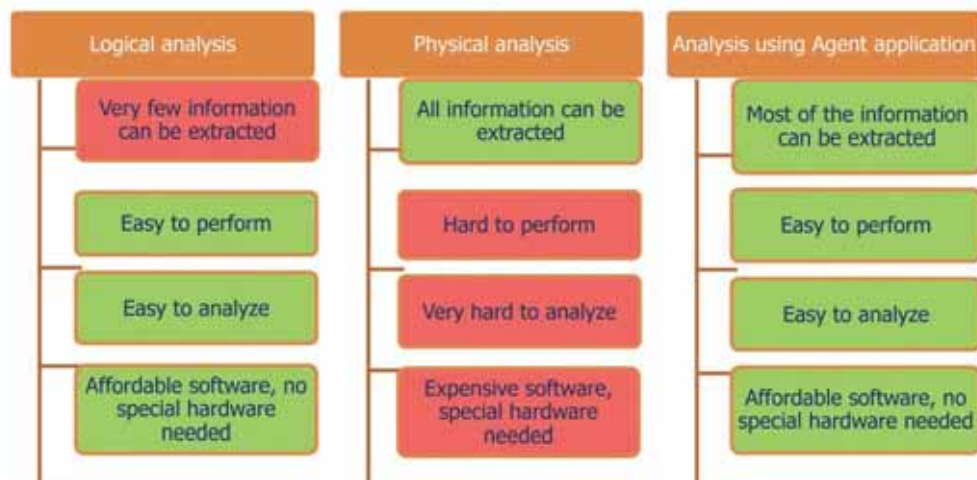
RF Protection – Today Relying on Faraday Bags or Getting Devices in Airplane Mode Immediately and Keep Charged.

Wireless network Isolation Box

- Mobile phones may be needed to be active for the analysis or extraction process. But an incoming call or message may overwrite some logically deleted data.
- In order to prevent such an incidence from occurring, the phone needs to be analysed while keeping it in a box which does not allow any kind of radio frequency to propagate.
- A device made of a conducting material to protect from any electromagnetic interference and any holes must be smaller than RF wavelength.
- An RF isolation of -90dB (800MHz-3GHz) or better.
- Recommendation:- Network Isolation Bags (Faraday's Bags) to carry mobile phone along with charging unit as a first aid box.

How to Extract information ?

There are three ways to get forensic information from smartphones: logical analysis, physical analysis and using a special agent application working inside smartphone OS





Data Capture Options

Logical Analysis: – Extracting the data on the device that you see and can access on the device. No deleted information with this method. Call logs, phone books, sms messages, pictures, email, browsing etc. The “active” information on the device can be extracted using a “Logical” extraction tool. This is the standard method today. Plenty of tools and easy to use.

Physical Analysis: – The practice of extracting data from the physical memory of the device, and removable memory. Like PC forensics, you are getting the raw binary / hex data. Requires decoding and understanding of language and techniques used by device manufacturers. Physical analysis is the way to deleted information, but it is difficult and sparsely supported. Only a few tools.

Live Analysis : Live RAM Analysis

Chip Level Analysis: - Analysis of the chips in the phone by removing them from the device and probing for data, or rebuilding another phone. Extremely technical. Broken SIMs analyzed this way.

Precautions for Disk Analysis

- Take care while seizing live systems
 - Live memory analysis
 - Do not shutdown
 - Triage
 - Do not open any file without completing the seizure procedure.
 - Do not work on the actual device.
 - Take a live image of the RAM and the Hard disk attached to the system.

The Internal Process Design



FRONT END TOOLS

Data extraction tools

Accessories

Password recovery

➤ **ANALYSIS SOFTWARE & MACHINE (PC & Laptop)**

Data Analysis

Link Analysis etc.

➤ **BACK END TOOLS**

For report generation

Data Base Management

Capturing of Activities for Authenticity



Various Connectors



Cable Kit

Compact Casings



■ Storage Bag

■ Storage Bag

■ Optional Bluetooth® & IR Module

■ Rugged Carrying Case

■ USB Port

■ Self-Selecting Adapters
(storage rack for up to 20 adapters)

■ USB Port

■ SIM Card Port

■ Phone Cable Jack



Some Front End Data Extraction Tools

Hardware + Specific Software

- The Hand held device for Data extraction from Handsets, SIM, Memory Cards

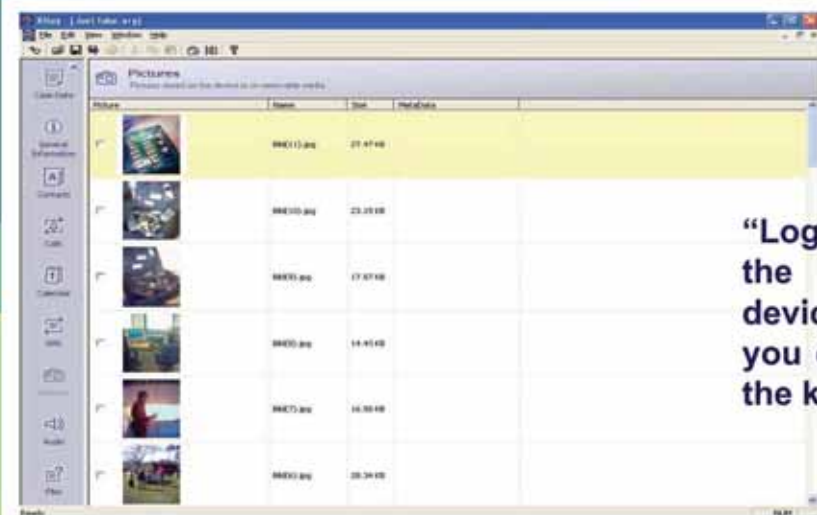


- The Ruggedized Casing





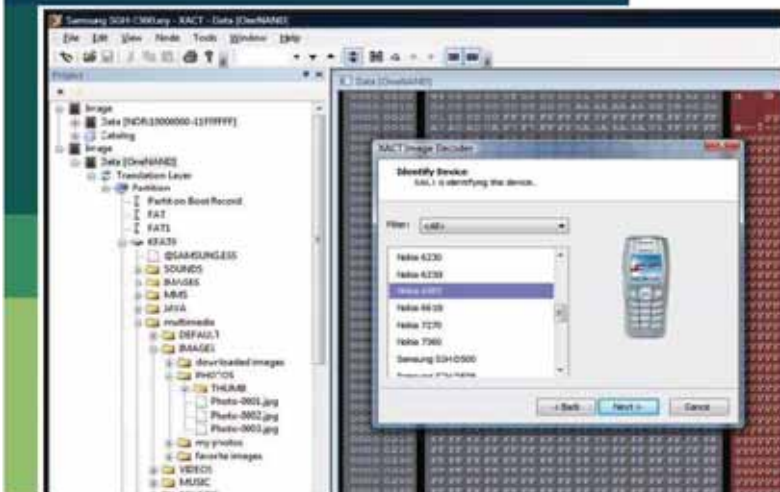
Logical Acquisition



“Logical” Acquisition Pulls the “Active” Data off the device... Basically, anything you can see or access using the keypad.



Physical Acquisition & cloud data recovery



Today's Top Tools:

“Physical” Acquisition Accesses the Internal Memory and Pulls the Raw Data from the Memory. Formats and Storage Differ From Manufacturer to Manufacturer.



Physical analysis for smartphones



How to deal with gigabytes of that?

```

00000000: 17 00 9A 82 05 00 01 00 00 00 9E 01 00 00 9D 02 ..S.....h...R,
00000001: 05 00 01 00 00 00 A6 01 00 00 77 88 03 00 01 00 .....|....*E...
00000002: 00 00 70 00 00 00 00 00 07 00 04 00 00 00 30 32 ..b....b.....02
00000003: 32 30 03 90 02 00 14 00 00 00 AE 01 00 00 04 96 ..0..b.....@....b
00000004: 02 00 14 00 00 00 C7 01 00 00 01 31 07 00 04 00 .....h.....'....
00000005: 00 00 01 02 83 00 01 92 0A 00 01 00 00 00 08 03 ..A.00 01 00 00 00 08 03
00000006: 00 00 02 82 05 00 01 00 00 00 2E 01 00 00 08 92 .....*..E...*
00000007: 03 00 01 00 00 00 00 00 00 00 09 92 03 00 01 00 .....*.....*
00000008: 00 00 18 00 00 00 0A 92 05 00 01 00 00 00 AC 03 .....*.....*
00000009: 00 00 7C 92 07 00 00 89 00 00 EE 01 00 00 00 A0 .....|..*..c...
00000010: 07 00 04 00 00 00 30 31 30 30 01 A0 03 00 01 00 .....0100, ....
00000011: 00 00 01 00 00 00 02 A0 04 00 01 00 00 00 00 08 04 00 01 00 00 00 08 .....W.....
00000012: 00 00 03 A0 04 00 01 00 00 00 00 06 00 00 01 A4 .....*.....*
00000013: 00 00 03 00 00 00 00 00 00 00 02 A4 03 00 01 00 .....*.....*
00000014: 00 00 00 00 00 00 03 A4 03 00 01 00 00 00 00 09 .....*.....*
00000015: 00 00 01 00 00 00 00 00 00 00 07 A4 03 00 01 00 .....*.....*
00000016: 00 00 01 00 00 00 00 00 00 00 48 71 00 00 40 42 .....*.....h...*
00000017: 0F 00 1C 00 00 00 0A 00 00 00 32 30 30 38 3A 30 .....*.....h...*
00000018: 34 3A 32 3E 20 31 32 3A 30 37 3A 30 35 00 32 00 .....*.....h...*
00000019: 30 38 3A 30 34 3A 32 31 20 31 32 3A 30 37 3A 30 .....*.....h...*
00000020: 35 00 F3 19 00 00 E8 03 00 00 28 01 00 00 64 00 .....S.y.....|...d.
00000021: 00 00 38 00 00 00 0A 00 00 09 41 06 06 06 A6 17 .....S.....A...w.
00000022: EE E2 10 74 86 DC 7D 2A 9C 9F 9B 9C 61 1A 98 DA 3a-TV0)*a.._a.wh
00000023: 5C 89 84 48 83 FF 97 AA DE 01 E7 03 89 7E 41 10 WpMIe-C0.30n-A.
00000024: 06 38 4E 4E 79 43 56 2A 23 E3 44 07 4B A6 C0 54 SsbYpE..FPD.kEAT
00000025: 08 ED DF CF 34 D0 89 97 14 8E 45 52 42 4F 17 3F .NR48B..eMRD0.?
00000026: F2 27 3F 83 53 5C 01 2B 8B 38 AT BA 4D 1C 30 03 w'Z1Y..wXSD0.C.
00000027: C0 35 71 36 80 45 6B C5 C9 06 6D DF 1D 38 3E 4C ASqGeeEl.m.N.0?1
00000028: 46 77 07 47 FE 7F 3C 10 F1 27 46 6D 84 D4 0E 6E Fv.Gocpc?zEIS.n
00000029: 5B 8A 8A AA 42 21 1D 32 07 07 8A 8A 31 B1 2D +ABC.,2V.JCE1a-
00000030: A9 9C E8 78 03 41 87 2C 42 7F CB 5E FC 7E 2E E8 Emy0*.E0?n..a
00000031: 85 5F 55 C0 2A C1 KA C4 1D 0B 3D 53 5F 14 22 BA ..Ull8EL.*BU.*e
00000032: FE 29 37 6D D1 8D 45 02 44 3B DA 08 EF 75 E3 E8 w07mCFH.F0.nurs
00000033: BF C6 89 8A 1B 19 6B 96 0A 77 50 86 A0 8F E4 05 lEKA..k..v0T uA.
00000034: A8 2E 1B 8F 41 96 AD 6E 94 A4 6F FD 83 A3 2E 7A e>.1A--n"*cep?z
00000035: A3 F4 7C 29 76 47 C7 42 87 79 8F F1 3E CB 10 7D 0g) vD3E ytc?T.}
00000036: E7 A2 58 90 24 35 11 3F 50 F5 86 35 0C 43 EC 4D a0XhV..TPx+MOCm

```

Data recovery & Analysis

Name	Username	Password	Service Type
	meriparvati@gmail.com	AFcb4K5R+y_ZQjEH..	com.google
	ambataru@gmail.com		com.sec.android.ap...
	ambataru@gmail.com	AFcb4K5R+y_ZQjEH..	com.google
	ambataru@gmail.com		com.facebook.auth.L
	il.com.com.facebook.auth.L		
	com.facebook.auth.login		
	com.facebook.auth.login		
	m.facebook.auth.login		
	.facebook.auth.login		
	book.auth.login		
	.auth.login		
	n		
	ambataru@gmail.com	gmh7rcr@	smtp
	ambataru@gmail.com	gmh7rcr@	imap
	ambataru@gmail.com		Google Talk

User Account

Name: [Blank]

Username: ambataru@gmail.com

Password: gmh7rcr@

Service Type: smtp

Server Address: smtp.gmail.com

Phone numbers and Emails

Organizations

Address

Notes

Recovery of Deleted

D	L	U	E	F	G	H
SMS Messages	Unknown	5/23/2013	23-05-2013 08:19:37(UTC+0)	TD-CGHSDL	◆%◆%◆%◆s' TD-CGHSDL	Deleted
SMS Messages	Incoming	5/23/2013	23-05-2013 08:19:37(UTC+0)	From: TD-CGHSDL	Sir/Madam,◆%◆%◆%◆s' TD-CGHSDL>◆x◆◆◆. Sir/Madam, 0 medicines have been issued on Ben Id 466882 on	Deleted
SMS Messages	Incoming	5/23/2013	23-05-2013 08:19:37(UTC+0)	From: TD-CGHSDL	Sir/Madam, 0 medicines have been issued on Ben Id 466882 on 2013-05-23 in WC-LAXMIBAI NAGAR from Pharmacy Counter.	
SMS Messages	Incoming	7/19/2013	19-07-2013 04:21:57(UTC+0)	From: MD-ADHAAR	Your One Time Pin is 575625 and is valid for 15 minutes	
MMS Messages	Outgoing	11/3/2013	03-11-2013 04:31:49(UTC+0)			Deleted
SMS Messages	Incoming	12/3/2013	03-12-2013 07:28:22(UTC+0)	From: MD-CEO-DL	"Delhi goes to polls on 4th Dec 2013- Don't forget to exercise your right". CEO-Delhi. (Helpline No-1950)	Deleted
MMS Messages	Outgoing	12/31/2013	31-12-2013 17:56:05(UTC+0)			Deleted



Password recovery tool:

- Rainbow tables
- Dictionary Attack
- Brute force attack
- High computing machines
- Hardware accelerators
- Distributed attack
- 100000 password attacking speed
- Customized key space,
- Prior information will help





ANALYSIS TOOLS:

- Segregation of data in various formats.
- Logical analysis of data recovered.
- Integration of various analysis tools.
- Linking with existing data base.
- Archiving the data for future use.



BACK END TOOLS:

- Customized Report Generation Software
- Data Base Management
- Storage Servers
- Authenticity of the

OPERATION.....an
arrangement with camera to
capture the on going
activities on a particular device.





Chinese make handsets

- No identification for individual Handsets.
- Multiple handsets with same IMEI number.
- Use of non-standard OS.
- No Off-the shelf Solution.
- Gaps left by industry would be filled by in-house limited R & D activities.



GPS FORENSIC

- GPS Forensic – in infancy.
- GPS devices are very popular during commission of a crime. Either instrumental or just present.
- Offenders generally unaware that device is autonomously collecting and logging positional data while the offence is being carried out.
- Information extremely important for investigation and evidence.

GPS Device data extraction tool

Extraction of data

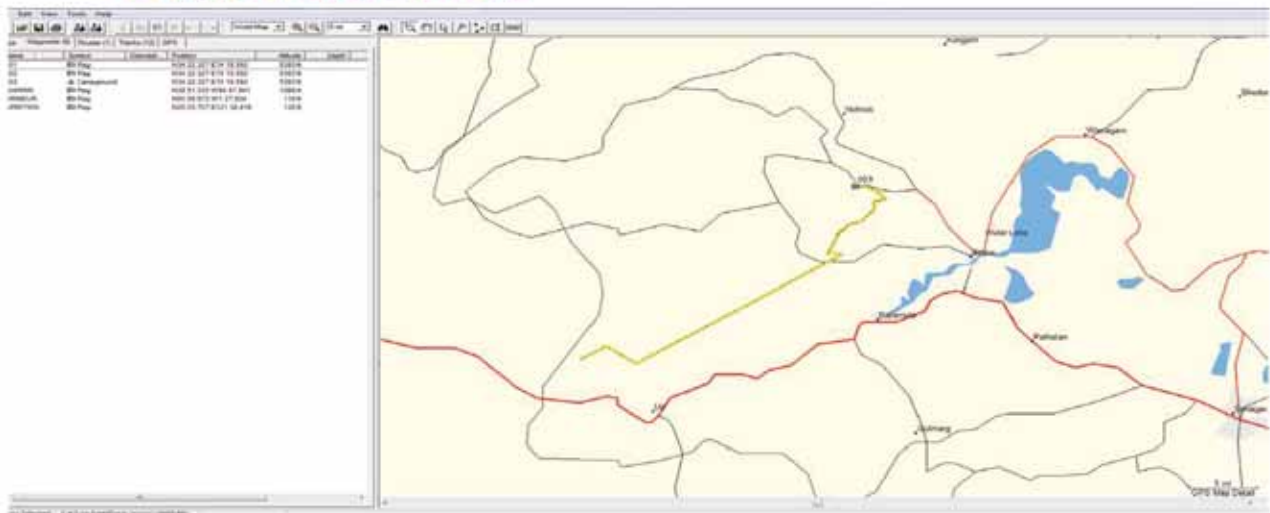
- All the maps, waypoints.
- Last saved location.
- Destination
- Tracks and routes
- Calendars
- All other relevant information and content

Support For:

- ✓ Garmin
- ✓ Magellan
- ✓ Tomtom
- ✓ Any Other



GPS devices Data recovered



SIM Cloning

- For logical isolation of a phone that does not turn ON without a SIM card, from the network. Also, to create an image of the seized SIM card.
- It must ensure that contents of the original SIM cards are not modified.
- The cloned card should not connect to the network when put in a phone.
- The extraction device must support Unicode and extended character set to extract data irrespective of language to support all the languages as supported by the SIM card phones.
- It should include proper interface to read the SIM cards.
- It should extract data from all 2G, 3G,4G etc.

What Can Be Extracted From A SIM?

- As SIM is a smart card it has
 - A processor
 - Non-volatile memory
- Processor is used for providing access to the data and security
- To access the data we need;
 - Standard smart card reader
 - SIM access Software
- Data stored in binary files

Start with the SIM on GSM Phones



FROM GSM and SIM Cards (Partial List):

- IMSI: International Mobile Subscriber Identity
- ICCID: Integrated Circuit Card Identification (SIM Serial No.)
- MSISDN: Mobile Station Integrated Services Digital Network (phone number)
- Network Information
- LND: Last Number Dialed (sometimes, not always, depends on the phone)
- ADN: Abbreviated Dialed Numbers (Phonebook)
- SMS: Text Messages, Sent, Received, Deleted, Originating Number, Service Center (also depends on Phone)
- SMS Service Center Info: GPRS Service Center Info:
- Location Information: The GSM channel (BCCH) and Location Area Code (LAC) when phone was used last.
- * **When SIM Locked – Cannot Be Cracked without Network Operator Assistance.**

Not on SIM, but Exclusive To GSM Devices

- IMEI: International Mobile Equipment Identity. - To Find IMEI, Type #*06#. IMEI is on the Device, registers with the network, along with IMSI. IMSI+IMEI+MSISDN the most detailed identity information of user.

A PIN Locked SIM is Not Accessible Without PIN – Requires PUK From Service Provider.

What Can Be Pulled from the Device



- Phonebook
- Call History and Details (To/From)
- Call Durations
- Text Messages with identifiers (sent-to, and originating) Sent, received, deleted messages
- Multimedia Text Messages with identifiers
- Photos and Video (also stored on external flash)
- Sound Files (also stored on external flash)
- Network Information, GPS location
- Phone Info
- Emails, memos, calendars, documents, etc. from PDAs.
- Today with Smartphones – GPS Info, Social Networking Data, Web Browsing History, Video Calling, Recording etc.



Memory card Data Extraction Device

- Most of the new phones have add-on memory cards that enhance the phone capabilities.
- These memory cards may have information or data that might have not been there in SIM or phone memory or may have over flowed into it.
- Extraction of all kinds of logical/ deleted data/information including:
 - Phone book
 - Call logs (Received, dialed, missed)
 - Text/Pictures messages
 - MMS
 - Video /Audio files of all possible formats
 - Pictures & wallpapers
 - Manufacturing details
 - Network Supported information
 - Log of access to internet related services like GPRS, Wi-Fi, 3G etc.
 - All the known file formats.
 - Temporary files present in the memory.
 - Memory dump for unknown files.



Memory card contd..

- Card reader for reading different kinds of memory cards (SD, MSC, SMC, CFC, MD, MMC, PCMCIA, xD, Ms, MS-Pro etc and to connect to computer via USB.
- Ability to recover all files physically present in the memory, which includes deleted files as well irrespective of file system.
- Reveal missing/ hidden files and directories.
- Read the memory in read only mode so that the contents of data are not modified or deleted.
- Generate and store an image of the memory card for later analysis and evidence.
- Support Unicode and extended character set.

Video/Image Forensics

- **video enhancement**
- restoration of low quality CCTV video to fingerprint analysis.
- Digital filtering technique
- image authentication and tamper detection

The Challenges of Data extraction today for Lay enforcement agencies today

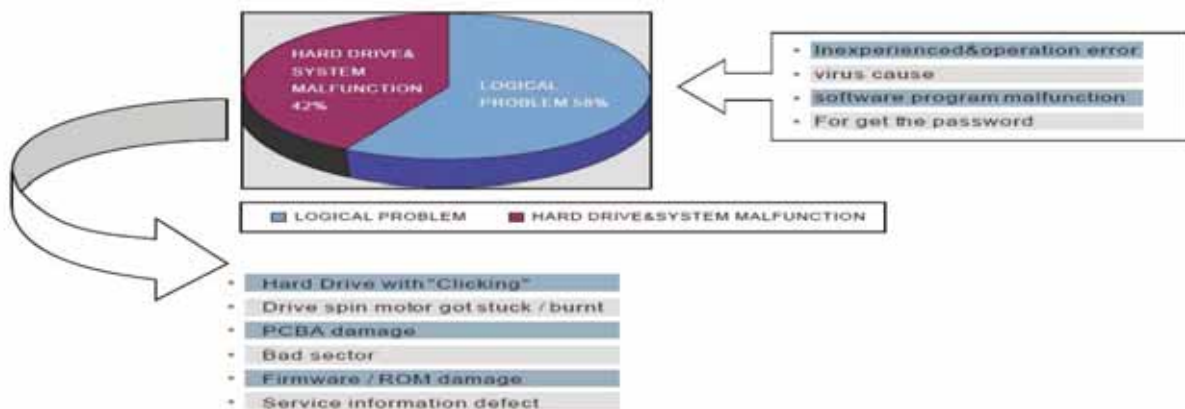
- Encryption
- Damaged Handset
- Damaged SIM cards
- Damaged Hard Disks
- Antiforensic tools

HDD Data recovery

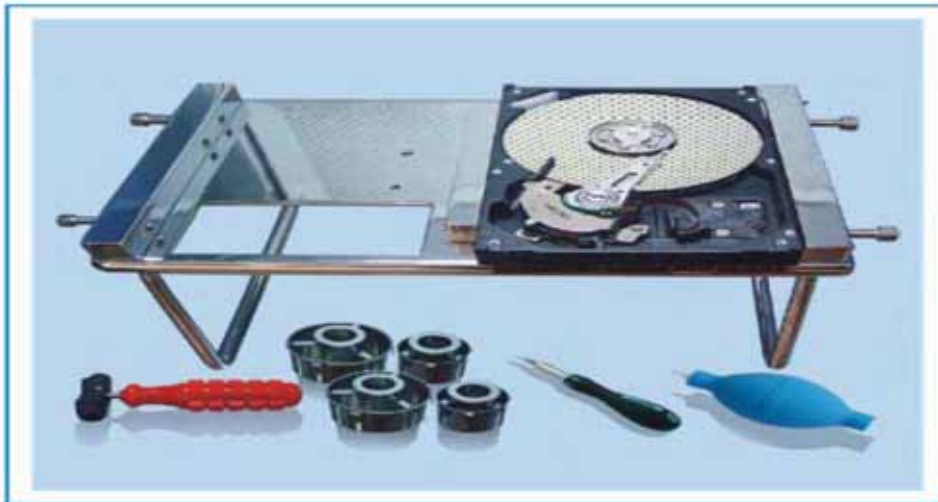
- Logical data
- Physical data
- Data recovery Formatted disk
- Data recovery from raid configured HDD

Data recovery from Un responsive HDD

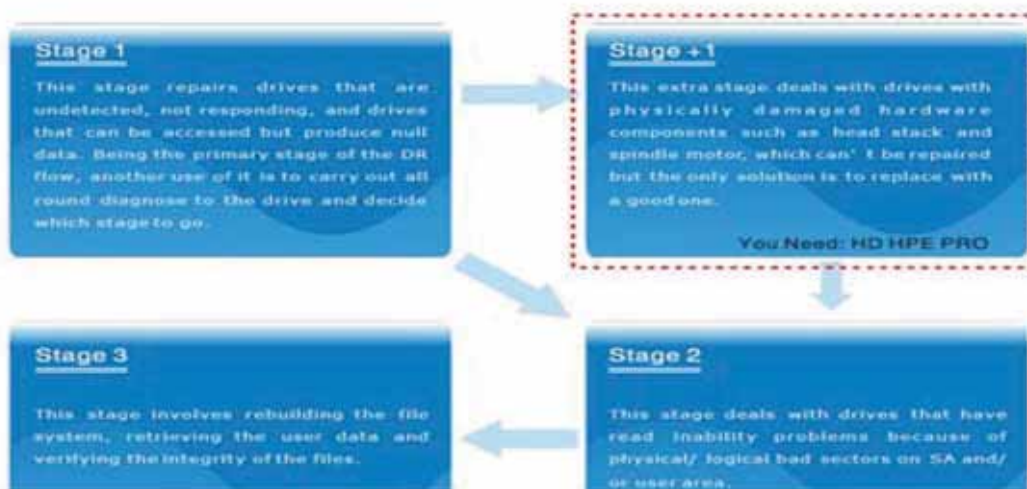
As a specialist in data recovery world, you know many reasons of data loss. In generally, we can sum up as follow:



Data recovery from unresponsive disks



Different stages of Data recovery



What u need for data recovery from damaged HDD

- Clean room
- Header and platter replacement kit
- Imaging tools
- Analysis tools

Damaged Mobile data recovery

- Non bootable
- Damaged
- PIN Locked
- Pattern locked

Contd...

- Chipp off
- JTAG
- ISP

JTAG

- JTAG Forensics is a process that uses that same process and involves connecting the the Test Access Ports (TAPs) on a PCB via solder, molex or jig and then uses a supported JTAG Box (Riff, Z3X, ATF, etc.) to instruct the processor to acquire the raw data stored on the connected memory chip to get a full physical image from the device.
- This process is non-destructive to the phone.

JTAG



ISP

- In-System Programming (ISP) applied to forensics, is the practice of connecting to an eMMC or eMCP flash memory chip for the purpose of downloading a device's complete memory contents.
- eMMC and eMCP memory are the standard in today's smartphones.
- ISP practice enables examiners to directly recover a complete data dump without removing the chip or destroying the device.
- Identifying the taps that connect to the memory chip using a multimeter is required in ISP technique.
- Thus, for each evidence phone, a second identical phone that can be destroyed will be needed.
- It is recommended that you take JTAG before taking ISP. Because ISP requires very fine precision soldering, it is recommended that you have adequate soldering experience.

Chip-off

- Chip-off Forensics is the process in which a memory chip is removed from a device and prepared so that a chip reader can acquire the raw data to obtain a physical data dump.
- A chip reader, like the UP 828P Programmer or a SIREDA test socket, is required to perform the read and in the case of the UP 828P, a specific adapter will be required depending on the specific chip.

Chip-off...



Flasher Boxes and their importance

- Flasher boxes are also known as flashers or clips and they are mobile phone service devices used by mobile phone service providers and shops. They are mainly used to recover user data from dead or faulty mobile phones that otherwise will not provide access to data stored on their internal memory.
- They can also be used to update or replace software that is stored in the mobile phone's Read Only Memory (ROM)
- Other uses for flasher boxes include removing or changing carrier settings and unlocking SIM restrictions or carrier based locks or call restrictions.
- Flashers can be illegally used to change the IMEI number of some mobile phone devices. This in effect enables criminals to illegally re-enable stolen or lost mobile phones that won't be otherwise usable on a certain mobile phone network.

Flasher boxes and their importance

- Flasher boxes offer access to the phone memory unmatched by command based methods. They also do not require the investigator to install any software on the target mobile phone and therefore do not disrupt the evidence in that way
- This in turn means that they follow rules of evidence more closely than command based forensic software tools
- But because they are not usually documented, there are no easy methods of determining if they do actually preserve evidence in the phones memory and there is no guarantee that the flashers will work in a consistent manner
- Moreover, these devices not approved or tested by the mobile phones manufacturers to work properly on their mobile phone headsets. Furthermore, they are not forensically proven nor tested for forensic soundness. Because of that, investigators should be careful when attempting to use such devices in mobile phone forensics cases.



A separate wet lab setup for treatment of damaged SIM cards. Manual extraction of Silicon Chip is done from the SIM card by chemical treatment (Fuming Nitric Acid, Sulfuric Acid, Acetone, Ethanol etc.).



MINIMUM FORENSIC INFRASTRUCTURE



Digital Investigation, Training & Analysis Centre

DITAC



MOU between CID Haryana & NTR0 in Aug 2016



A Joint Initiative of
NTR0 & CID Haryana



Transforming Policing
through
Digital Investigation



Digital Investigation, Training & Analysis Centre
Learn-Investigate-Againhead

DITAC



सत्यमेव जयते
Department of Industrial Policy and Promotion
Ministry of Commerce and Industry
Government of India

Enforcement of Intellectual Property Rights: Govt. Initiatives and Role of Police

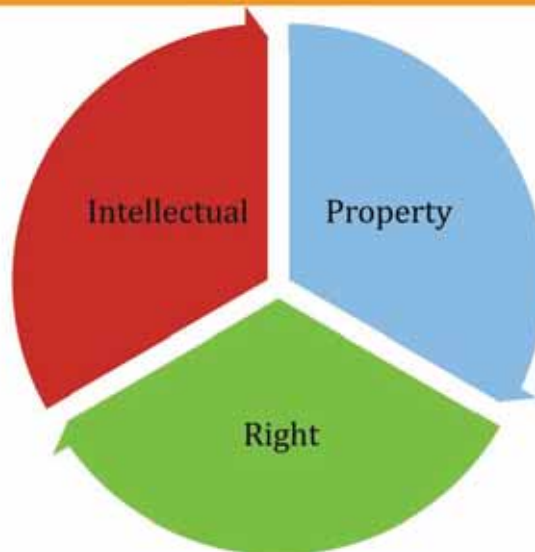
Date: 27th July 2018

Venue: Bureau of Police Research and Development Headquarters, New Delhi

Sumit Kapoor
Cell for IPR Promotion and Management
Department of Industrial Policy & Promotion
Government of India
Ministry of Commerce & Industry



What is Intellectual Property Right?





What is Intellectual Property Right?



Patents



Trademarks



Copyright



Geographical Indication



Designs



Semi Conductor Layout Design



IP Infringement Impacts

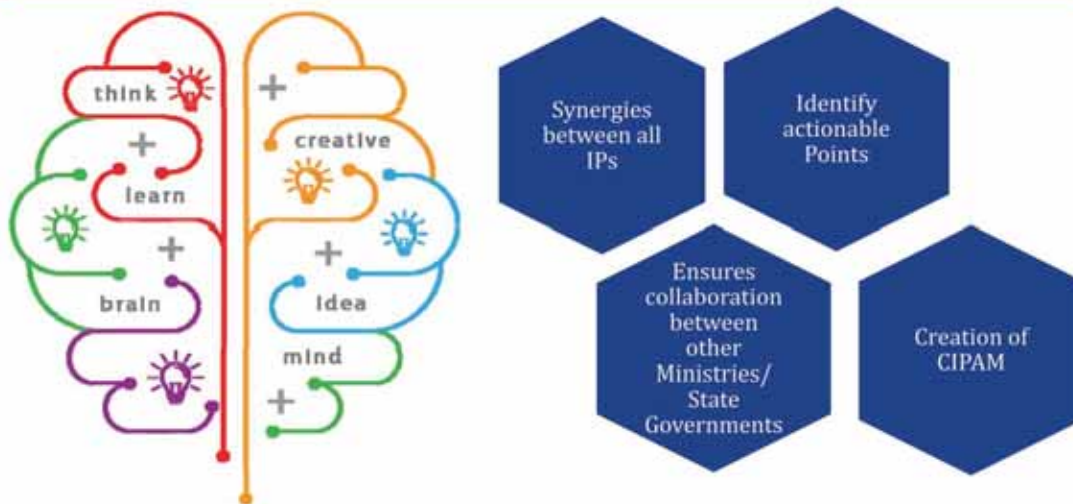




National IPR Policy: Background



National IPR Policy: Guide for all time





National IPR Policy: 7 Objectives

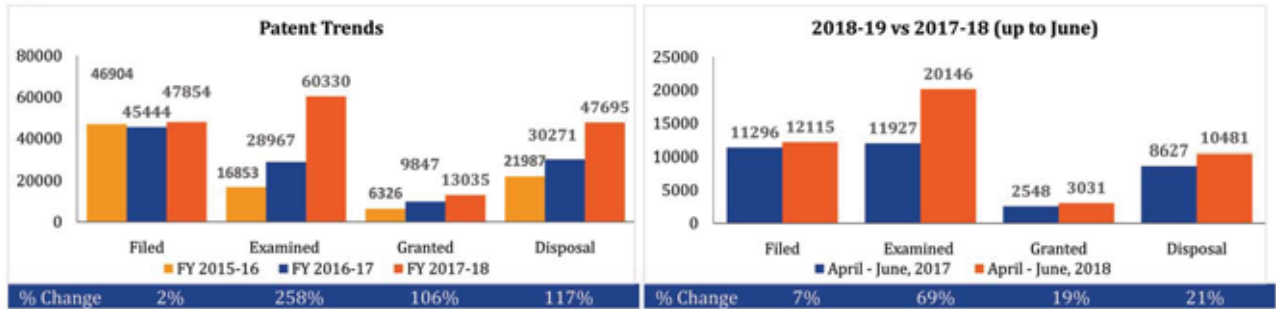


Early Achievements





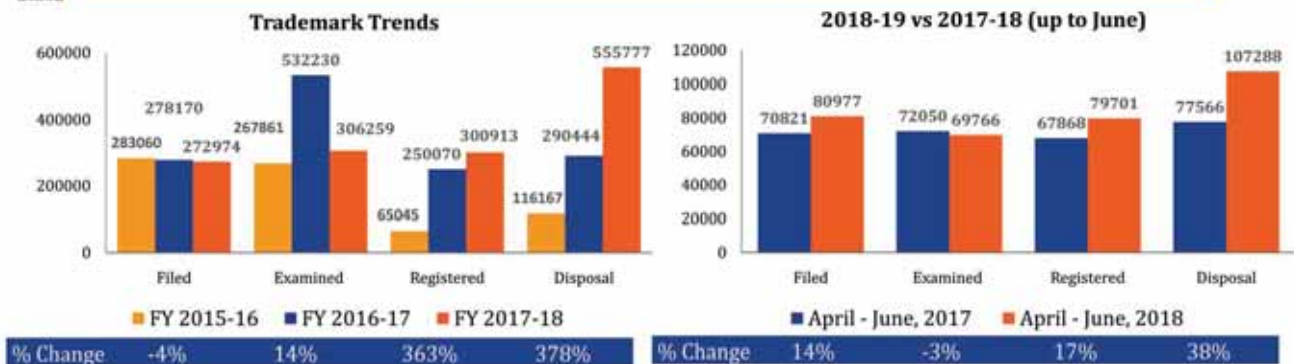
Patents



- Patent applications examination has increased by 69% in the last three months compared to the same period last year.
- Through expedited examination, 103 patents granted – fastest in just 113 days from date of request for examination (as on 30th June).



Trademarks



- Trademark registrations have increased almost 4 times in 2017-18 vis-à-vis 2015-16.
- Trademark disposals have increased almost 4 times in 2017-18 vis-à-vis 2015-16.
- 38% increase in Trade Mark Disposal in the last three months compared to the same period last year.



Copyrights

Copyright Trends



% Change 57% 181% 344% 610%

2018-19 vs 2017-18 (up to June)



% Change -39% -49% 46% 106%

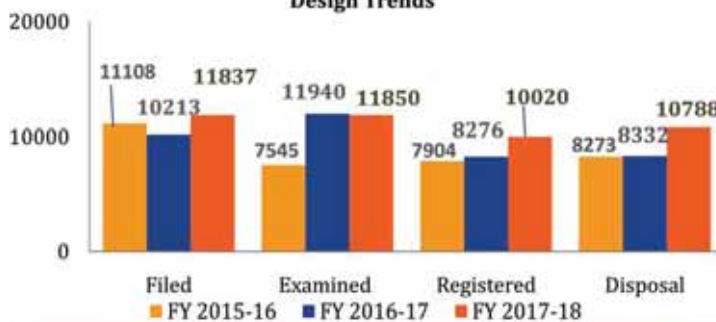
- Copyrights filings shot up by 57% in 2017-18 vs 2015-16
- Copyright disposals up 6 times in 2017-18 vs 2015-16
- Target to maintain the pendency of examination under a month.
- Copyright disposals increased by 106% in the last three months compared to the same period last year.

S. No.	Type of Pendency	Pendency as on 31-3-18	Pendency as on 31-6-18
1	Examination	315	310 (work awaited)
2	Discrepant cases for disposal	10482	9002



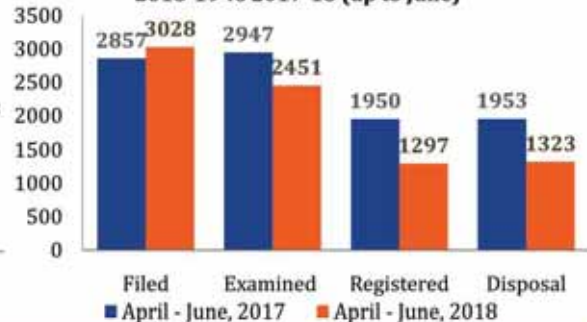
Designs

Design Trends



% Change 7% 57% 27% 30%

2018-19 vs 2017-18 (up to June)



% Change 6% -17% -33% -32%

- The target is to maintain the pendency of examination under a month
- The target for 2018-19 is to clear 980 amended cases per month (approx. 9863 cases in a year)

Type of Pendency	Pendency (31-3-2018)	Pendency (30-6-2018)
Examination (<1 month)	590	1001
Amended cases	9863	10965
Cancellation/ Rectification Cases	110	111



International Engagements

- Cabinet decision to acceded to WCT and WPPT.
- India is the first country to ratify Marrakesh Treaty on 24th July, 2014 to facilitate access to publish works by visually impaired persons – Treaty came into operation on 30th September, 2016
- MOU on IPRs signed with United Kingdom, Singapore, Japan and Sweden. Scope of work plan extended.
- International MOUs from various Departments/ Organizations examined from IPR angle. MoUs vetted - **2014: 80 | 2015: 110 | 2016: 130 | 2017: 107** (Till August,2017)
- Trade Secrets Workshop organized in collaboration with United States to discuss issues and possible solutions in October, 2016 – further studies undertaken.



IPR Awareness and Promotion

IPR Awareness in 100 Schools 7500+ students reached	19 roadshows for industry in 18 states	2 Training of Trainers - TIFAC and Agastya International		
IPRs included in NCERT Curriculum of Commerce for Class XII	Reaching rural schools through EduSat (SATCOM)	Workshops, Competitions in colleges		
IPRISM				





Enforcement: Sensitization of Enforcement Agencies & Judiciary



33
Police Training Programs

Advisory issued by MHA to include IPR in police training curriculum

80 infringing websites pulled down in collaboration with NIXI



Judicial Colloquiums held at NJA, Bhopal in collaboration with WIPO

IPR Enforcement Toolkit launched for Police officials

IPR Cells created under the State Police Department in Karnataka, Punjab and Jammu & Kashmir

Anti-piracy videos launched using Bollywood actors and cartoon characters



Anti Piracy Videos by Cartoon Character Motu - Patlu





National Workshop on Enforcement of IPRs



Inaugurated by Hon'ble Home Min(I/C) for Commerce & Industry and Hon'ble Minister of State

Police officials and Public Prosecutors from pan India participated in the workshop

Will help Enforcement agencies understand their role in effective enforcement of IPRs



IPR Enforcement Toolkit

1

About

A ready reckoner for Police for IPRs enforcement in India.

2

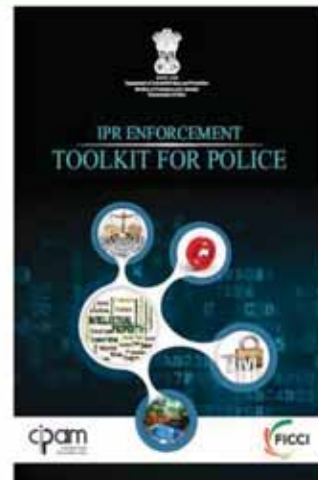
Objective

To aid in dealing with IP Crimes - Trade Mark counterfeiting and Copyright piracy in particular

3

Contents

Criminal Offences under Trade Mark and Copyright Acts
General Guidelines for Search And Seizure
Checklist for Registering Complaint
Checklist for Search And Seizure





Online Copyright Piracy: Enforcement Issues

There are a number of intricacies involved in taking enforcement action against online copyright piracy



Fighting Piracy by involving Stakeholders





Civil & Criminal Remedies under IP Legislations

S. No.	Act	Civil Remedy	Criminal Remedy
1	The Copyrights Act, 1957	✓	✓
2	The Trade Marks Act, 1999	✓	✓
3	The Patents Act, 1970	✓	✗
4	The Designs Act, 2000	✓	✗
5	Semiconductor Integrated Circuits Layout Design Act, 2000	✓	✓
6	The Geographical Indications of Goods (Registration & Protection) Act, 1999	✓	✓
7	The Protection of Plant Varieties and Farmer's Rights Act, 2001	✓	✓
8	The Biological Diversity Act, 2002	✓	✓



Action Required from Police



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6.	NSG i. Sh Abhishek Trivedi, IG (Prov.), HQ NSG ii. Col Ashish Singh, GC (FOS), Trg. Centre iii. Col Amandeep Singh, GC (ESG), ESG, Manesar iv. Sh Akash Kashyap, Sqn Cdr. Trg Centre
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2.	Ministry of Railways i. Sh Dhakane Vikas Nawnath, Sr. Divisional Security Commissioner / RPF/Pune/Central Railway, Mumbai ii. Sh Rajmohan Pandey, Divisional Security Commissioner / RFP Ahmadabad/Western Railway iii. Sh Rahutosh Pandey, Divisional Security Commissioner / RFP Nagpur / South East Central Railway, iv. Sh C Raghubir, Divisional Security Commissioner / RFP, Lunding / North Frontier Railway, Guhwhati
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5	NEPA Sh. Kala Ramachandran, Director, NEPA
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8	RAF Md. Helal Firoz, Comdt. Aligarh, 104 Bn. RAF Aligarh (UP)

Glimpses of
POLICE
EXPO 2018



























SCREENING COMMITTEE REPORT

1. Introduction

During the DsGP/ IsGP Conference held in 2016, the **Hon'ble Prime Minister** expressed his views that Young Police officers need to train sub-ordinates on latest technologies, techniques in investigation, trend in crime, trend in crime etc. Accordingly, Bureau had started to organize focussed Conference for Young Superintendents of Police on annual basis. The theme of first, two day Conference was **Technological Empowerment for Impactful Policing** and organized on 01st and 02nd August, 2017 at Vigyan Bhawan. This Conference was attended by Young Superintendents of Police (States/UTs) with 5-10 years of service experience and Commandants of CAPFs.

In the series of same endeavour, Bureau has organized a two-day Conference for Young Superintendents of Police clubbed with **Police Expo - 2018** in association with FICCI on **July 26-27, 2018 at BPR&D Hqrs, Mahipalpur, New Delhi.**

The Theme of the Conference was **“Predictive Policing and Contemporary Challenges for Indian Police Forces”** and the Exposition was focussed on areas such as Artificial Intelligence; Predictive Policing / Crime Analytics/ Big data Analytics; Geospatial Technology; Cyber Crime; Surveillance Tracking & UAVs; CCTV Equipment.

In the above programme, BPR&D had constituted an **Expert Screening Committee** for evaluating the products and technologies of the exhibiting companies.

2. Members of Screening Committee (ESC)

- a) **Smt. Anupam Kulshreshtha, IG (Prov.), CRPF**
- b) **Shri Abhishek Trivedi, IPS, IG (Prov.), NSG**
- c) **Shri H.P. Agarwal, Director, Dte. of Low Intensity Conflicts (DLIC), DRDO**
- d) **Dr. Novaline Jacob, Scientist/Engineer ‘G’, and Director/Head, DKD, ADRIN, Hyderabad**
- e) **Prof. Kolin Paul, Department of Computer Science & Engineering, IIT, Delhi**
- f) **Prof. Nisheeth Srivastava, IIT Kanpur**
- g) **Shri N.K. Jain, Sr. Director, CDAC, New Delhi**
- h) **Shri Rahul Chaudhry, Chair, FICCI Homeland Security Committee**
- i) **Shri Gopesh Agrawal, DIG (Mod), BPR&D**
- j) **Shri K.S. Banyal, DIG (Ops.), BSF**
- k) **Shri Arvind Dutt Abdali, DIG (IT), BSF**
- l) **Shri Anuj Kumar Singh, Commandant (Int.), ITBP**
- m) **Shri Sanjay Sharma, PSO (Weapons), BPR&D**
- n) **Shri Sumeet Gupta, Senior Director, FICCI**

3. Terms of reference for the Expert Screening Committee

- **Visit the Booths / Stalls of exhibiting companies and evaluate technologies relevant for policing under varied conditions.**



- Facilitate B2G meetings between Industry/ Solution Providers and user organisations (CAPFs & State Police Forces) to undertake field trials and pilot projects for better customisation and adoption.
- Prepare review report of the product/ technology / solution, which could be uploaded on the website of the BPR&D.

4. Methodology followed by Expert Screening Committee (ESC)

The first Meeting of the ESC was held on 23.07.2018 at BPR&D Hqrs, Mahipalpur. During the Meeting, it was decided that ESC would evaluate the technologies / gadgets showcased by the exhibitors. For evaluation purpose, if need be, the demonstration of the technologies / gadgets would also be organized. The evaluation would be focussed on the functioning of Police under varied conditions and following recommendations for each technology / gadget would be suggested: -

- a) Ready for Acquisition.
- b) Pilot Projects.
- c) Field trials.
- d) Need for further development / customization.
- e) Not relevant.

The ESC has also suggested that during the evaluation, representative from State Police and CAPFs may also be co-opted.

The Committee has also clarified the definitions of following for better understanding of various aspects at later stage: -

- a) **Ready for Acquisition:** The committee would suggest this recommendation when it is found that the evaluated technologies / gadgets are matured enough for acquisition immediately. However, any State / CAPF / CPO intend to acquire such technologies / gadgets, the Committee suggests that to understand the functioning and operational aspects of technologies / gadgets the user organizations may go for the field trial at their end. The final decision for further acquisition would be of user organization.
- b) **Pilot Project:** A small scale preliminary study to be conducted in order to evaluate feasibility, extent of suitability & utility, readiness and financial implications on acquisition prior to performance of a full-scale acquisition. Technologies / Gadgets those have been recommended for pilot project may be chosen by any State / CAPF / CPO for pilot project. The final decision for further customization or acquisition would be of user organization.
- c) **Field Trials:** Field trial is a test of the performance of a product / procedure to determine its efficiency or usefulness in actual functional / operational conditions. Technologies / Gadgets those have been recommended for field trial may be chosen by any State / CAPF / CPO for conducting field trial. The final decision for further customization or acquisition would be of user organization.
- d) **Need for further development / customization:** The committee would suggest this recommendation when it is found that the evaluated technologies / gadgets are not suitable in the present form but after certain modifications / customizations same would be of the utility for law enforcement agencies.
- e) **Not Relevant:** The committee would suggest this recommendation when it is found that any item/Gadget/Product/Technology is not suitable in the backdrop of the utility/functional requirement of Security forces.

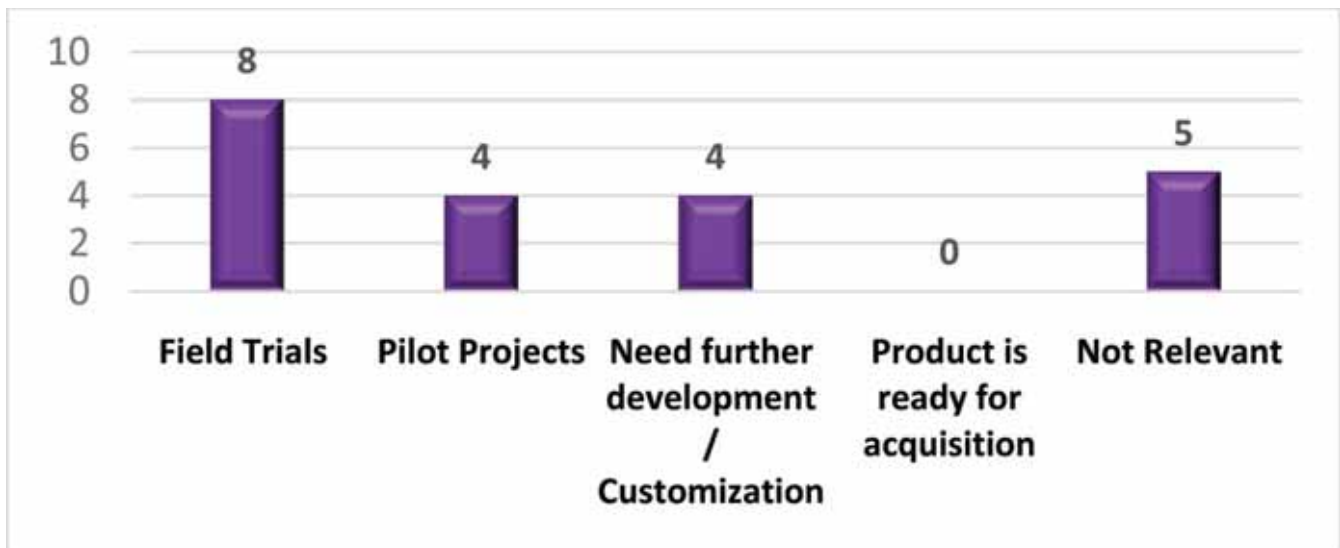
The 2nd Meeting of ESC was held on July 26th, 2018 at BPR&D Hqrs. As wide range of products had been showcased by about 96 exhibitors in the Police Expo, the Committee decided to divided into three groups under the leadership of following: -

- a) **Smt. Anupam Kulshreshtha, IG (Prov.), CRPF**
- b) **Shri Abhishek Trivedi, IG (Prov), NSG,**
- c) **Shri H.P. Agarwal, Director, Dte. of Low Intensity Conflicts, DRDO**

The head wise compilation are as under: -

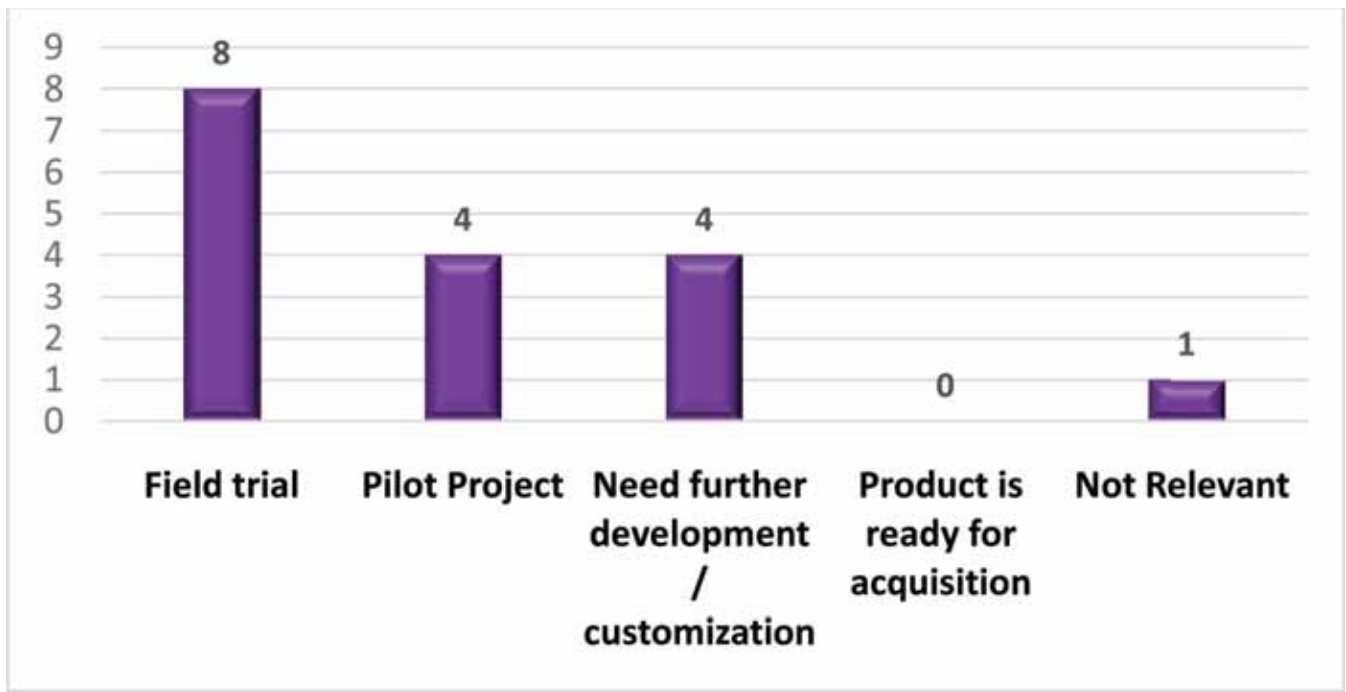
[Predictive Policing / Crime Analytics / Big data Analytics](#)

21 different products / technologies were evaluated by the ESC, details of firm, contact person and recommendations of ESC against each item are given in [Appendix 'A'](#). The summarised details are represented below: -



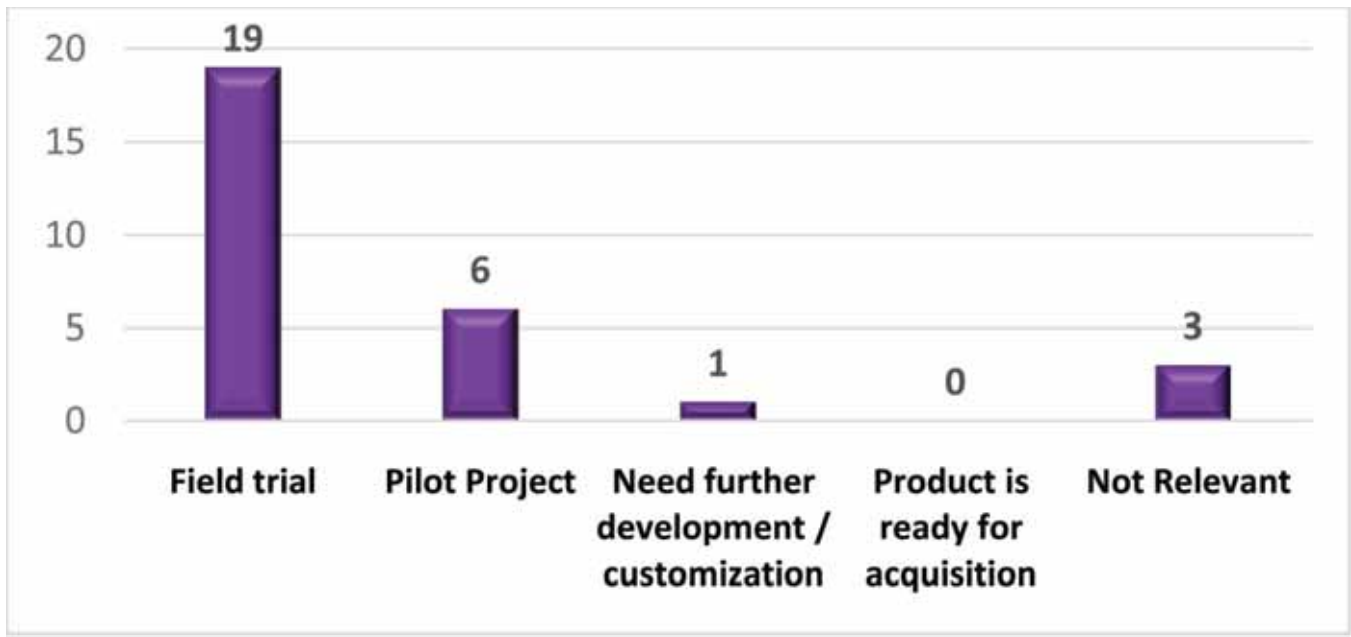
Surveillance Tracking and UAVs

17 different products / technologies were evaluated by the ESC, details of firm, contact person and recommendations of ESC against each item are given in **Appendix 'B'**. The summarised details are represented below:-



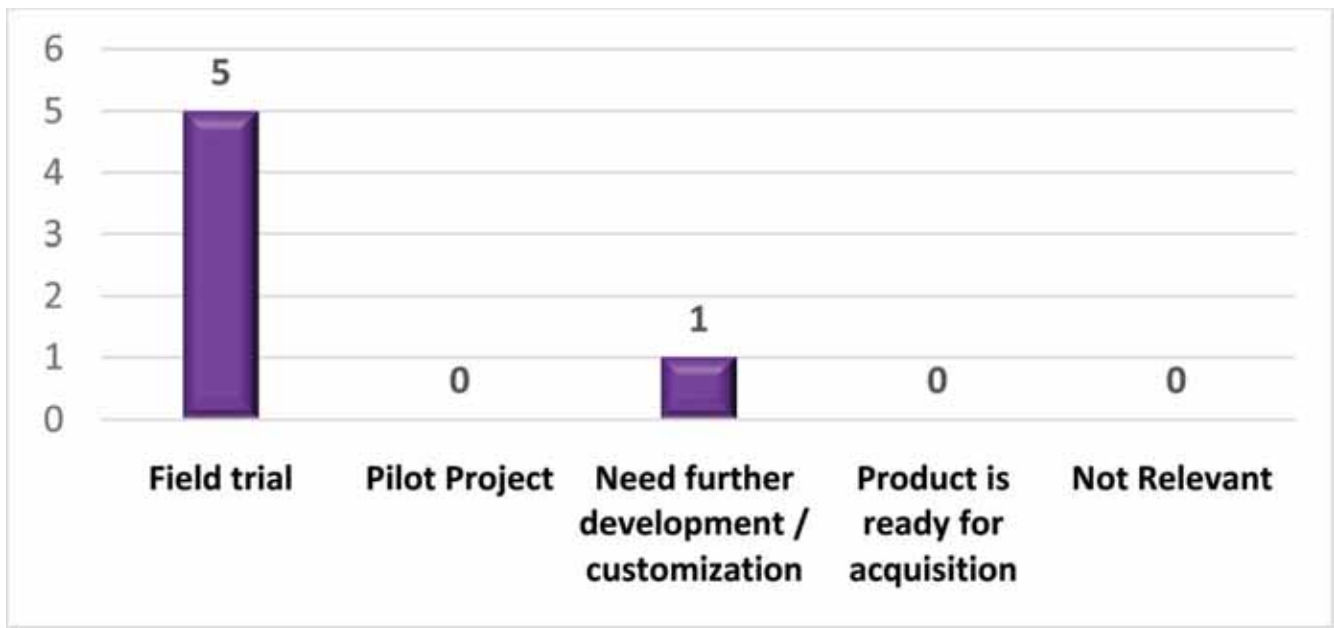
Cyber Crime

29 different products / technologies were evaluated by the ESC, details of firm, contact person and recommendations of ESC against each item are given in **Appendix 'C'**. The summarised details are represented below:-



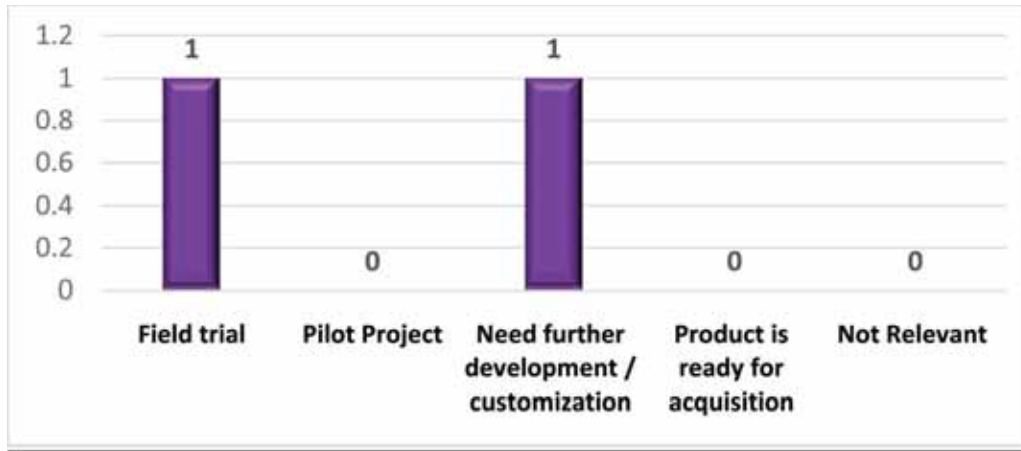
Geospatial technology

06 different products / technologies were evaluated by the ESC, details of firm, contact person and recommendations of ESC against each item are given in Appendix 'D'. The summarised details are represented below:-



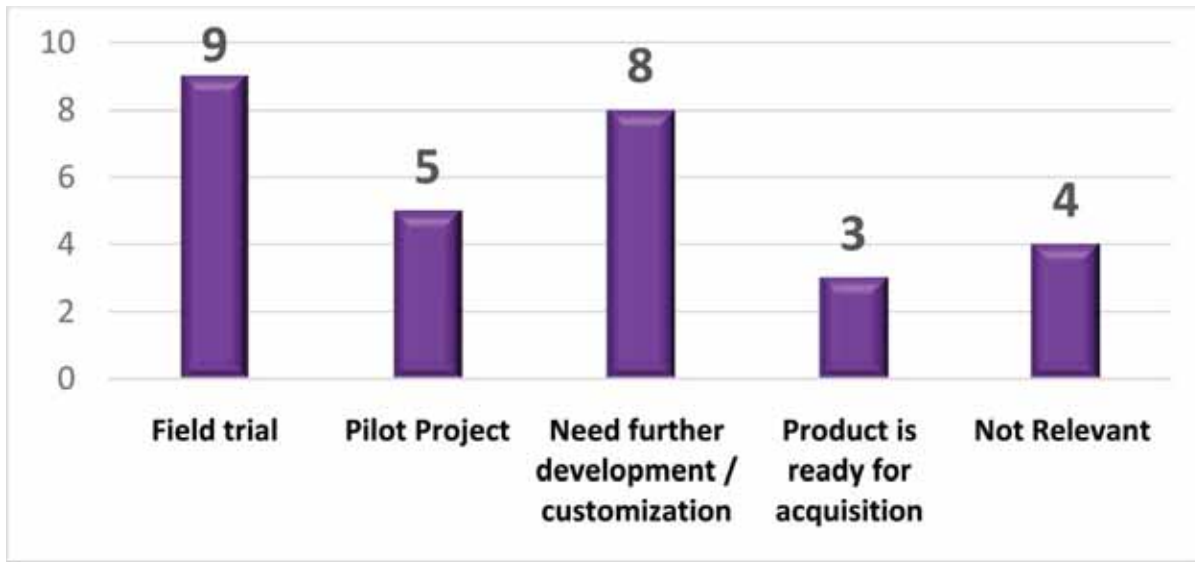
CCTV Equipment

02 different products / technologies were evaluated by the ESC, details of firm, contact person and recommendations of ESC against each item are given in Appendix 'E'. The summarised details are represented below: -



Other Products

29 different products / technologies were evaluated by the ESC, details of firm, contact person and recommendations of ESC against each item are given in Appendix 'F'. The summarised details are represented below: -

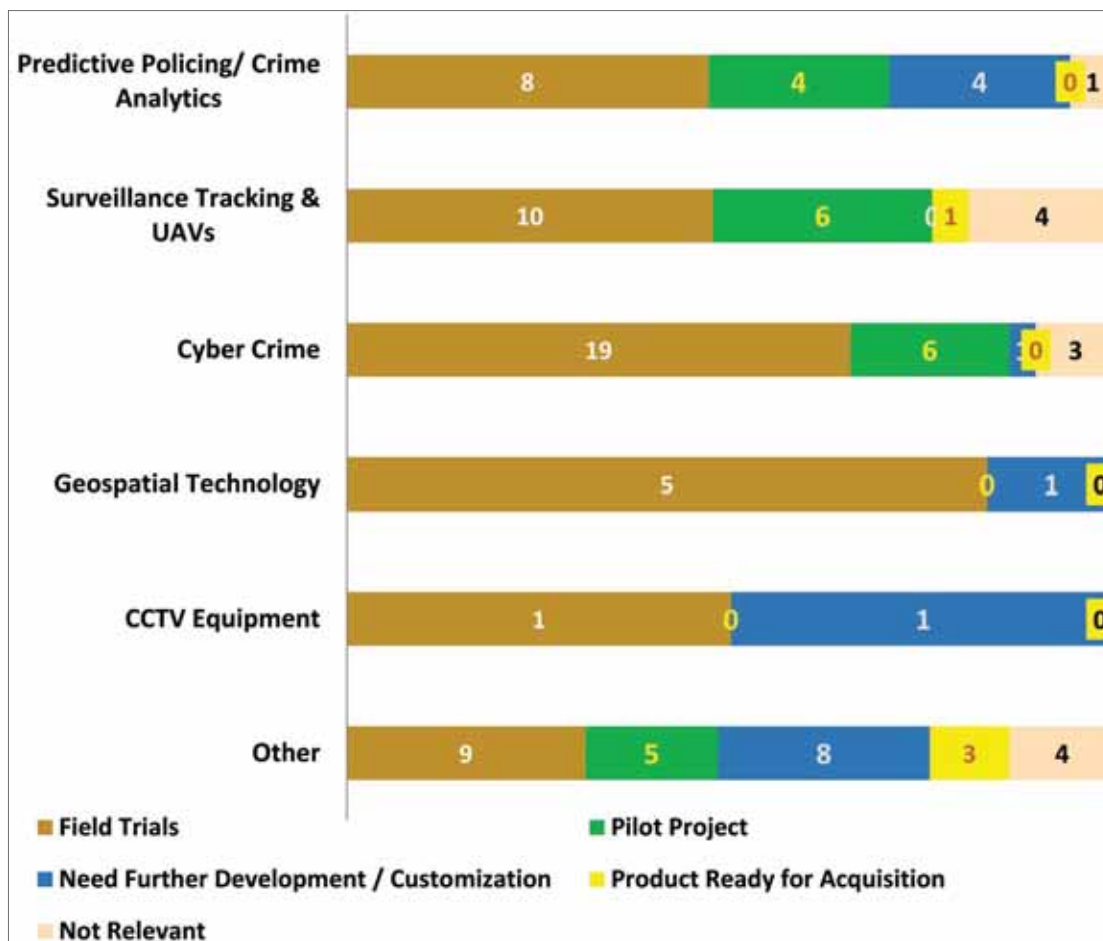


Summary

ESC evaluated total 104 different products / technologies.



Category wise summary of actions recommended by ESC



Tabulated Category wise summary of actions recommended by ESC.

Sr. No		Category Suggested Recommendations of ESC				
		Field Trials	Pilot Project	Need Further Development / Customization	Products Ready for Acquisition	Not Relevant
1	Predictive Policing / Crime Analytics / Big data Analytics	08	4	4	0	1
2	Surveillance Tracking and UAVs	10	6	0	1	4
3	Cyber Crime	19	6	1	0	3
4	Geospatial technology	05	0	1	0	0
5	CCTV Equipment	01	0	1	0	0
6	Other Products (Miscellaneous)	09	5	8	3	4
	Total	52	21	15	04	12

Disclaimer

The Police Expo 2018 was organized by BPR&D in association with FICCI with aims to create awareness among Young Superintendents of Police from States and Commandants from CAPFs, regarding latest technologies in areas such as Artificial Intelligence; Predictive Policing / Crime Analytics/ Big data Analytics; Geospatial Technology; Cyber Crime; Surveillance Tracking & UAVs; CCTV Equipment, for effective delivery of Police Services to citizens. The Experts Screening Committee and BPR&D would not certify or endorse any products / technologies / gadgets etc. evaluated by Experts Screening Committee. This Report and any recommendation of Expert Screening Committee should not be claimed for any approval of product/technologies /gadgets etc. by the firm in future.

The Recommendations of this report are merely the suggestions for law enforcement agencies as a ready reference and not for usage for any other purpose or for any legal issues involved.

Predictive Policing / Crime Analytics / Big data Analytics

Sr. No	Product Name	Organisation	Name	Contact Details	Recommendation of the Screening Committee by BPR&D	Remarks of the Screening Committee constituted by BPR&D
1	SAS Software	SAS Institute India Pvt. Ltd.	Ms. Desere Pereira	+91 9819 397 688 desere.pereira@sas.com	Field trials	Demonstrated on Computer, for proper evaluation any State Police may test the software.
2	Smart Cloud Crime Prevention and Reporting System	Smartcloud Infoservices Pvt Ltd	Dr. Gajanan Sakhare	+91 9765 610 333 gajanan@scispl.com	Field trials	Demonstrated on Computer, for proper evaluation any State Police may test the software.
3	Voice Analysis System	Vehere Interactive Private Limited	Mr. Suman Mukherjee	+91 9874 566 683s uman.mukherjee@vehere.com	Field trials	Useful for Central and State Forensic Science Laboratories. The System can also be useful for CBI, NIA and IB.
4	Prophecy	Innefu Labs Private Limited	Mr. Tirender Wig	+91 9999 026 322 tarun@innefu.com	Field trials	Useful Product, Interested user may contact for implementation.
5	P-Akhbar	Centre For Development of Advanced Computing (C-DAC)	Dr. Ajai Kumar	+91 9371 034 560 info.aai@cdac.in	Pilot Project	The State Police may analyse the Gaps if any, by implementing the same in their State as pilot project for taking further decision on acquisition of P – Akhbar.
6	NameScape	Centre For Development of Advanced Computing (C-DAC)	Mr. Ravi Mane	+91 2025 503 486 ravim@cdac.in	Pilot Project	The State Police may analyse the Gaps if any, by implementing the same in their State as pilot project for taking further decision on acquisition of NameScope .
7	Crimeophobia's Predictive Policing	Crimeophobia	Criminologist Snehil Dhall	+91 9821 729 876 snehildhall@crimeophobia.com	Not relevant	-
8	Video-Based Incident Detection System	Synergylabs Technology OPC Private Ltd	Mr. Sushil Kumar	9650510245 sushil@synlabs.io	Further product development required	They have a relevant product portfolio but a reasonable amount of work has to be done to build Solution for a field trial.

9	Facial Recognition Software	Synergylabs Technology OPC Private Ltd	Mr. Sushil Kumar	9650510245 sushil@synlabs.io	Further product development required	Facial Recognition is a useful technique for Investigation agencies and this home grown company can be encouraged for a proper trial.
10	Automatic Number Plate Recognition System	Synergylabs Technology OPC Private Ltd	Mr. Sushil Kumar	9650510245 sushil@synlabs.io	Field Trial	-
11	Smart E-Police	Inmodel Technologies Pvt. Ltd. And Smartetouch - Jointly	Mr. Chirag Shah	9898082011 chirag@inmodel.com	Field trials	Demonstrated on Computer and found useful for State Police. However, for proper evaluation State Police may test the software.
12	Anveshak	Centre For Development of Advanced Computing (C-DAC)	Dr. Ajai Kumar	9371034560 info.aai@cdac.in	Pilot Project	The State Police may analyse the Gaps if any, by implementing the same in their State as pilot project for taking further decision on acquisition of Anveshak.
13	Face Recognition Software	Centre For Development Of Advanced Computing (C-DAC)	Mrs. Soma Mitra	9830577891 soma.mitra@cdac.in	Pilot Project	The State Police may analyse the Gaps if any, by implementing the same in their State as pilot project for taking further decision on acquisition of Software.
14	Video Surveillance	Centre For Development Of Advanced Computing (C-DAC)	Dr. Sanjay Kadam	7588236113 sskadam@cdac.in	Field trials	Useful for State as well CAPFs.
15	Artificial Intelligence Powered Video Content Analysis	Kerala Police Cyberdome In association with Neuroplex Pvt Ltd	Mr. Savio Victor	9995951581 savio@neuroplex.in	Field trials	Useful for State as well CAPFs.
16	Surveillance Video - Real Time Incident Detection and Report (RTIDR)	Alnetix Private Limited	Mr. Dilip Singh	9999130578 dilip.singh@alnetix.com	Further product development required	Products seems useful for Rescue / Relief operations. Further development required. The interested user may go for customization and further development
17	Faception	Collaborative Intelligence P Limited	Mr. Sangeeta Das	9811603910 sdas@collabint.com	Will need customization	This is new Technology - some State Police / CBI / NIA can invest in doing a pilot. User agencies can start a short trial to see the efficacy of the method.

Surveillance Tracking and UAVs

Sr. No	Product Name	Organisation	Name	Contact Details	Recommendation of the Screening Committee by BPR&D	Remarks of the Screening Committee constituted by BPR&D
1	Netra Family Of Multirotor Unmanned Aerial Vehicles (UAVs)	Ideaforge Technology Pvt Ltd	Ms. Faizan Haroon	+91 8433 702 916 demo@ideaforge.co.in	Pilot Project	May be tested by CAPFs and State Police in real operational / functional conditions.
2	Q-Series Quadrotor (UAVs)	Ideaforge Technology Pvt Ltd	Ms. Faizan Haroon	+91 8433 702 916 demo@ideaforge.co.in	Field trials	May be tested by CAPFs and State Police in real operational / functional conditions.
3	A400 & Genesis	Asteria Aerospace Private Limited	Mr. Alok Nautiyal	+91 7899 770 379 Alok.nautiyal@asteria.co.in	Pilot Project	May be tested by CAPFs and State Police in real operational / functional conditions.
4	Rakshakbot	Collaborative Intelligence P Limited	Mr. Sangeeta Das	+91 9811 603 910 sdas@collabint.com	Field trials	It is a useful product with multi-utility and can operate in almost all types of terrain. It can be utilized for surveillance ops., CAPFs / NSG/SPG/ Specialized teams may use it. The user may go for trials as per their operational requirement and Subsequent induction.
5	Bppulse (Force And Vehicle Tracking and Real Time Situational Assessment)	Collaborative Intelligence P Limited	Mr. Sangeeta Das	+91 9811 603 910 sdas@collabint.com	Not required in this domain	This product is not really useful for either the CAPF or investigation agencies / States Police. This is more logistics tracking device.
6	Lu 600 C	Lamhas Satellite Services Limited	Mr. Manoj Shah	+91 9820 446 644 manoj@lamhas.com	Not relevant	-
7	Zepcam	Lamhas Satellite Services Limited	Mr. Manoj Shah	+91 9820 446 644 manoj@lamhas.com	Not relevant	-

Sr. No	Product Name	Organisation	Name	Contact Details	Recommendation of the Screening Committee by BPR&D	Remarks of the Screening Committee constituted by BPR&D
8	Mahindra Airvan 8 - Special Missions Capable Aircraft	Mahindra Aerospace Private Limited	Mr. Mahesh Acharya	+91 9886 303 077 A.acharya.mahesh@mahindraaerospace.com	Pilot Project	May be tested by CAPFs and State Police in real operational / functional conditions.
9	Mobile Data Terminal	Maxworth Electronic Systems Pvt. Ltd.	Mr. Aditya Singh Bhati	+91 8920 248 084 Aditya.singh@maxworthsystems.com	Field trials	The mobile data terminals for emergency services and e-challan Systems and RFID based weapon system may be exhausted by SPOs
10	Mini Remote Operated Vehicle (MROV)	Nikon Electronics Pvt Ltd	Mr. Deepak Jairath	+91 9866 125 555 deepakjairath@nikonelectronics.com	Field trials	ROVs, Analyser (Telephone and line) and X-ray viewing system recommended for evaluation
11	Real Time Viewing System	Nikon Electronics Pvt Ltd	Mr. Deepak Jairath	+91 9866 125 555 deepakjairath@nikonelectronics.com	Not relevant	-
12	Mini UAV	Tata Advanced Systems Ltd.	Mr. V S Srinivasan	+91 9999 464 003 vssrinivasan@tataadvancedsystems.com	Pilot Project	May be tested by CAPFs and State Police in real operational / functional conditions.
13	Aeroscope - Drone Detection System	IIO Technologies Pvt Ltd	Mr. Sunny Sharma	+91 9890 441 007 sunny@iotechnologies.com	Field trials	-
14	Matrice 210	IIO Technologies Pvt Ltd	Mr. Sunny Sharma	+91 9890 441 007 sunny@iotechnologies.com	Field trials	-
15	Mavic Pro	IIO Technologies Pvt Ltd	Mr. Sunny Sharma	+91 9890 441 007 sunny@iotechnologies.com	Pilot Project	May be tested by CAPFs and State Police in real operational / functional conditions.
16	Third Eye	(C-DAC)	Mr. Ritesh Mukherjee	+91 9433 493 563 ritesh.mukherjee@cdac.in	Pilot Project	May be tested by CAPFs and State Police in real operational / functional conditions.

Sr. No	Product Name	Organisation	Name	Contact Details	Recommendation of the Screening Committee by BPR&D	Remarks of the Screening Committee constituted by BPR&D
17	Kranioz	Kerala Police Cyberdome in association with Technorip Innovations Pvt Ltd	Mr. Arun PM	+91 9995 569 347 arun@technorip.com	Field trials	May be tested by CAPFs and State Police in real operational / functional conditions.
18	Hand Held Thermal Imager (NETRO)	MKU	Mr. Sarnath Khandelwal	+91 9717 988 577 Sarnath.khandelwal@mku.com	Field trials	May be tested by CAPFs and State Police in real operational / functional conditions.
19	Night Vision Device (NETRO)	MKU	Mr. Sarnath Khandelwal	+91 9717 988 577 Sarnath.khandelwal@mku.com	Field trials	May be tested by CAPFs and State Police in real operational / functional conditions.
20	Radio/Sat phones / sights / TI/Common Surveillance Cellphone system	BEL	-	-	Field trials	The products like satcom, surveillance equipment and weapons sights are seemingly useful. The SATCOM, and weapons sights are recommended for trial evaluation.
21	Leica DS 2000 Utility Detection Radar	Hexagon	-	-		Product is ready for acquisition by law enforcement agencies. Product seems to be of utility for AS check teams Road Opening Parties, in ANO / Anti-Terrorist Operations being undertaken by CAPFs, State Police, SPG, NSG. Users may consider it for trials on no cost no commitment basis and go for induction as per their utility in their Ops. Environment.

Cyber Crime

Sr. No	Product Name	Organisation	Name	Contact Details	Recommendation of the Screening Committee by BPR&D	Remarks of the Screening Committee constituted by BPR&D
1	SuperMassive 9200	Sonic Wall India Technology Pvt Ltd	Mr. Sameer Pandey	9811055328 spandey@sonicwall.com	Field trials	Actual utility to be ascertained by law enforcement agencies by conducting field trials.
2	NSA 3600	Sonic Wall India Technology Pvt Ltd	Mr. Sameer Pandey	9811055328 spandey@sonicwall.com	Field trials	
3	TZ 500	Sonic Wall India Technology Pvt Ltd	Mr. Sameer Pandey	9811055328 spandey@sonicwall.com	Field trials	
4	CDR Analysis (CDAMS, CSA)	Foundation Futuristic Technologies Pvt. Ltd.	Ms. ReshamDatt	9818588000 rd@forensicsguru.com	Need modifications	-
5	Forensic Disk Duplicator- (TX1, Falcon)	Foundation Futuristic Technologies Pvt. Ltd.	Ms. ReshamDatt	9818588000 rd@forensicsguru.com	Field trials	-
6	Disk Forensic Software (Encase, Magnet Axiom)	Foundation Futuristic Technologies Pvt. Ltd.	Ms. ReshamDatt	9818588000 rd@forensicsguru.com	Field trials	Actual utility to be ascertained by law enforcement agencies by conducting field trials.
7	Mobile Forensic (UFED, XRY)	Foundation Futuristic Technologies Pvt. Ltd.	Ms. ReshamDatt	9818588000 rd@forensicsguru.com	Field trials	

Sr. No	Product Name	Organisation	Name	Contact Details	Recommendation of the Screening Committee by BPR&D	Remarks of the Screening Committee constituted by BPR&D
8	IMSI Catcher (both Vehicle Mounted and Backpack)	Vehere Interactive Private Limited	Mr. Suman Mukherjee	9874566683 suman.mukherjee@vehere.com	Pilot Project	May be tested by State Police in real operational / functional conditions.
9	Lawful Interception System	Vehere Interactive Private Limited	Mr. Suman Mukherjee	9874566683 suman.mukherjee@vehere.com	Pilot Project	
10	Metadata Interception & Analysis for IP Monitoring	Vehere Interactive Private Limited	Mr. Suman Mukherjee	9874566683 suman.mukherjee@vehere.com	Field trials	Actual utility to be ascertained by law enforcement agencies by conducting field trials.
11	Packet Worker	Vehere Interactive Private Limited	Mr. Suman Mukherjee	9874566683 suman.mukherjee@vehere.com	Does not meet requirement	-
12	Video enhancement and video Authentication software- Amped FIVE and Amped Authenticate software	Foundation Futuristic Technologies Pvt. Ltd.	Ms. Resham Datt	9818588000 rd@forensicsguru.com	Field trials	-
13	Auth Shield	Innefu Labs Private Limited	Mr. Tirender Wig	9999026322 tarun@innefu.com	Field trials	-
14	CryptoGram	Smart Cloud Infoservices Pvt Ltd	Dr. Gajanan Sakhare	9765610333 gajanan@scispl.com	Field trials	Suitable for situations where end to end encrypted messaging is required. Cloud based solution for reporting appears to be good. Users to contact for trial implementation.
15	CryptoStore	Smart Cloud Infoservices Pvt Ltd	Dr. Gajanan Sakhare	9765610333 gajanan@scispl.com	Not found relevant	-

Sr. No	Product Name	Organisation	Name	Contact Details	Recommendation of the Screening Committee by BPR&D	Remarks of the Screening Committee constituted by BPR&D
16	Belkasoft Evidence Center	3rd Eye Techno Solutions Pvt Ltd	Mr. Niraj Kumar	7042945222 Niraj.kumar@3ets.in	Pilot Project	Useful for Central and State Forensic Science Laboratories. The products/gadgets are found useful for investigating agencies.
17	CRU Ditto Kit	3rd Eye Techno Solutions Pvt Ltd	Mr. Niraj Kumar	7042945222 Niraj.kumar@3ets.in	Field trials	
18	HTCI EDAS Fox – Forensic Workstation	3rd Eye Techno Solutions Pvt Ltd	Mr. Niraj Kumar	7042945222 Niraj.kumar@3ets.in	Field trials	
19	HTCI EDAS Fox – Micro (Portable Forensic Workstation)	3rd Eye Techno Solutions Pvt Ltd	Mr. Niraj Kumar	7042945222 Niraj.kumar@3ets.in	Field trials	
20	HTCI EDAS Fox – TURBO Kit (Portable Digital Forensic Lab)	3rd Eye Techno Solutions Pvt Ltd	Mr. Niraj Kumar	7042945222 Niraj.kumar@3ets.in	Field trials	
21	Forensic Tool Kit Software	3rd Eye Techno Solutions Pvt Ltd	Mr. Niraj Kumar	7042945222 Niraj.kumar@3ets.in	Pilot Project	Useful for Central and State Forensic Science Laboratories. The products/gadgets are found useful for investigating agencies.
22	Oxygen Forensics Detective	3rd Eye Techno Solutions Pvt Ltd	Mr. Niraj Kumar	7042945222 Niraj.kumar@3ets.in	Field trials	
23	PC3000 Express, SSD and Flash	-Do-	Mr. Niraj Kumar	7042945222 Niraj.kumar@3ets.in	Field trials	
24	Teel Tech JTAG, ISP and Chip-off with Teel Tech Trg.	-Do-	Mr. Niraj Kumar	7042945222 Niraj.kumar@3ets.in	Pilot Project	

Sr. No	Product Name	Organisation	Name	Contact Details	Recommendation of the Screening Committee by BPR&D	Remarks of the Screening Committee constituted by BPR&D
25	AppSamvid	Centre For Development Of Advanced Computing (C-Dac)	Mr. Sandeep Romana	9100034447; ext: 340 sandeep@cdac.in	Field trials	Actual utility to be ascertained by investigating agencies by conducting field trials.
26	M-Kavach	Centre For Development Of Advanced Computing (C-Dac)	Mr. Krishna Chaithanya Manikonda	9100034447; ext: 520 mkchaitanya@cdac.in	Field trials	
27	Cyber Forensics Tools	Centre For Development Of Advanced Computing (C-Dac)	Ms. Amala R	9020133066 amala@cdac.in	Pilot Project	Actual utility to be ascertained by law enforcement agencies by conducting field trials.
28	USB Pratiroth	Centre For Development Of Advanced Computing (C-Dac)	Ms. Jyostna Grandhi	9100034447; ext: 340 gyostna@cdac.in	Field trials	
29	CDAC Password Recovery Tool	(C-Dac)	Mr. Nagesh R (Commercial), Mr. Raghavendra Patil (Tech.)	9481067393, 9845266882 nageshr@cdac.in, rspatil@cdac.in	Not found relevant	-

Geospatial technology

Sr. No	Product Name	Organisation	Name	Contact Details	Recommendation of the Screening Committee by BPR&D	Remarks of the Screening Committee constituted by BPR&D
1	3D Laser Scanner - P50/ BLK360 and Leica RTC 360	Hexagon Geosystems India	Mr. Amit Kumar	+91 9711 132 397 Amit.kumar@hexagon.com	Field trials	This Product (s) can be very useful for investigation agencies for crime records etc. Current 2D based system mainly employ melkods - the 3 D records can provide a different perspective which will be rich and have depth perception. User agencies - Staes Police etc. should plan field trial.
2	ArcGIS	Esri India	Mr. Anil Yadav	+91 9810 085 284 Aky@esriindia.com	Further product development required	-
3	MMI Map Engine	C E Info Systems Pvt Ltd (Map my India)	Ms. Sonal Bahuguna	+91 8527 179 791 sonal@mapmyindia.com	Field trials	Found useful, Actual utility to be ascertained by law enforcement agencies by conducting field trials.
4	NAGINS	Centre For Development Of Advanced Computing (C-DAC)	Mr. Sandeep Srivastava	+91 2025 503 245 Sandeepk@cdac.in	Field trials	-
5	Wireless Radio Tracking	Centre For Development Of Advanced Computing (C-DAC)	Mr. Sandeep Srivastava	+91 2025 503 245 sandeepk@cdac.in	Field trials	-
6	M.App Enterprise	Hexagon Geospatial	Ms. Anjul Garg	+91 7838 589 175 anjul.garg@hexagon.com	Field trials	-

CCTV Equipment

Sl. No	Product Name	Organisation	Name	Contact Details	Recommendation of the Screening Committed by BPR&D	Remarks of the Screening Committee constituted by BPR&D
1	Under vehicle inspection system (UVIS) DOSMO™	ASM International	Mr. Evgenii Belkin	79208991337 belkinen@algont.ru; evilrade@gmail.com	Field trials	Found useful for VIP security & Access control at vital installation. These access control systems with all their components should be trial evaluated by CAPFs
2	COM-SUR	Hayagriva Software (P) Ltd.	Mr. Ravi Hemmady	9867267764 ravi@yohaya.com	Concept is relevant. However, needs simplification.	-

Other Products

Sr. No	Product Name	Organisation	Name	Contact Details	Recommendation of the Screening Committee by BPR&D	Remarks of the Screening Committee constituted by BPR&D
1	Hand Held Ground Penetrating Radar	Bharat Forge Limited	Col (Retd) GIRISH WAGH	+91 9011 894 562 girish.wagh@bharatforge.com	Field trials	-
2	Multi-Motion Target System	Jay Robotix Pvt. Ltd.	Mr. Sundeep Rajula	+91 9912 046 844 sundeep@jayrobotix.com		Product is ready for acquisition by law enforcement agencies. It is a useful training aid for giving firing practice to troops in external / interval especially for applications fire. User may consider it for induction as per their requirement
3	APCO	Motorola Solutions India Pvt. Ltd.	Mr. Vivek Prakash	+91 8800 475 554 Vivek.prakash@motorola solutions.com	Pilot Project	-
4	Si500	Motorola Solutions India Pvt. Ltd.	Mr. Vivek Prakash	+91 8800 475 554 vivek.prakash@motorola solutions.com	Pilot Project	-
5	Mototrbo	Motorola Solutions India Pvt. Ltd.	Mr. Vivek Prakash	+91 8800 475 554 vivek.prakash@motorolasolutions.com	Pilot Project	-
6	Lex L11	Motorola Solutions India Pvt. Ltd.	Mr. Vivek Prakash	+91 8800 475 554 vivek.prakash@motorola solutions.com	Pilot Project	-
7	TETRA	Motorola Solutions India Pvt. Ltd.	Mr. Vivek Prakash	+91 8800 475 554 vivek.prakash@motorola Solutions.com	Pilot Project	-

Sr. No	Product Name	Organisation	Name	Contact Details	Recommendation of the Screening Committee by BPR&D	Remarks of the Screening Committee constituted by BPR&D
8	Inviballistic System	Prahar Equicom Pvt. Ltd.	Mr. Rajiv Mathur	+91 9910 179 300 rpm@praharequicom.com	Field trials	The laminate seems useful provided it gives ballistic protection for glasses against 7.62 x 39 mm HSC ammunition (At least). To be evaluated by CAPFs (CRPF /BSF) for ascertaining the veracity of claimed protection level.
9	Inviblast System	Prahar Equicom Pvt. Ltd.	Mr. Rajiv Mathur	+91 9910 179 300 rpm@praharequicom.com	Not relevant	-
10	JCI - GAJANAN - BINOCULAR	Jayashree Consulting India	Mr. J DINESH KUMAR	+91 8763 111 169 dinesh@jayashreeconsulting.com	Not relevant	-
11	JCI-GAJANAN-R-1000LM	Jayashree Consulting India	Mr. J DINESH KUMAR	+91 8763 111 169 dinesh@jayashreeconsulting.com	Not relevant	-
12	JCI-GAJANAN-AA-370LM-F	Jayashree Consulting India	Mr. J DINESH KUMAR	+91 8763 111 169 dinesh@jayashreeconsulting.com	Not relevant	-
13	JCI - GAJANAN - SEARCH LIGHT	Jayashree Consulting India	Mr. J DINESH KUMAR	+91 8763 111 169 dinesh@jayashreeconsulting.com	Field Trials	1000 ML search light, 370 ML search light long range binoculars, he products are proven and supplied to SPOs. The Products come with 02 years of replacement guarantee and all IP67 or above complaint. These products can be evaluated by SPOs for their usage.
14	Command Max	Business Octane Solutions Private Limited	Mr. Bashar Parvez	+91 9717 997 659 basharparvez@businessoctane.com	Need further development	-
15	Learner HyperMax	Business Octane Solutions Private Limited	Mr. Bashar Parvez	+91 9717 997 659 basharparvez@businessoctane.com	Need further development	-
16	Bullet Resistant Jackets / Body Armour	MKU	Mr. Samath Khandelwal	+91 9717 988 577 Samath.khandelwal@mku.com	Field trials	The Body Armour will have to evaluate by users as per the notified QRs for different levels of protections.

Sr. No	Product Name	Organisation	Name	Contact Details	Recommendation of the Screening Committee by BPR&D	Remarks of the Screening Committee constituted by BPR&D
17	Bullet Resistant Helmet	MKU	Mr. Sarnath Khandelwal	+91 9717 988 577 Sarnath.khandelwal@mku.com	Field trials	To be evaluated by users as per the notified QRs
18	Dual Video X-ray baggage scanner detector	Nuctech India Pvt. Ltd.	-	-	Field trials	Scanner, detectors can be evaluated by SPOs, including Body inspection system (For prisons)
19	Diagnostic tool for Communication systems / radios /Batteries	Aimil Ltd.	-	Field trials	-	These diagnostics tools / devices can be trial evaluator by communication branches of CAPFs (CRPF / BSF / NSG)
20	Water Mist aerator (WMA)	CFEES, DRDO	-	-	Product is ready for acquisition by law enforcement agencies.	Found very useful, Users may contact for implementation
21	Emergency ESCAPE CHUTE (EFC)	CFEES, DRDO	-	-	Product is ready for acquisition by law enforcement agencies.	Found very useful, Users may contact for implementation
22	Model FP - 600	ThirdWave	-	-	Need Modification	-
23	Model FT - 810	ThirdWave	-	-	Need Modification	-
24	Speed Enforcement System	Synergylabs Technology OPC Private Ltd	Mr. Sushil Kumar	9650510245 sushil@synlabs.io	Need Modification	-
25	Red Light Violation Detection System	Synergylabs Technology OPC Private Ltd	Mr. Sushil Kumar	9650510245 sushil@synlabs.io	Need Modification	-
26	Automatic Traffic Counter And Classifier	Synergylabs Technology OPC Private Ltd	Mr. Sushil Kumar	9650510245 sushil@synlabs.io	Need Modification	-

Sr. No	Product Name	Organisation	Name	Contact Details	Recommendation of the Screening Committee by BPR&D	Remarks of the Screening Committee constituted by BPR&D
27	You Report	Synergylabs Technology OPC Private Ltd	Mr. Sushil Kumar	9650510245 sushil@synlabs.io	Need Modification	-
28	IMB - IIITD Multimodal Biometrics Tool	IIIT Delhi	Prof Mayank Vatsa	9654653404 mayank@iiitd.ac.in	Field trials	-
29	Self Service - Chat Bot	AInetix Private Limited	Mr. Dilip Singh	9999130578 Dilip.Singh@AInetix.com Royalparinda11@gmail.com	Field trials	Useful solution

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Website : www.cattleyatech.com
Contact Person : Devant Kumar, Head Sales - India (IOT, Smart City & E-Surveillance)

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COLLABORATIVE INTELLIGENCE PVT. LTD.

PNB063, The Pinnacle
DLF Phase - V, Gurugram, Haryana
India

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Website : www.collabint.com

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India

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MEDIA COVERAGE

Police should Tie up with IITs, IIMs: Rajnath Singh

The New Indian Express, Jul 27, 2018

Union Home Minister Rajnath Singh on Thursday flagged rumour-mongering through the social media as a major challenge before police in the country. Police organisations should tie up with reputed institutes such as the IITs and the IIMs for innovative solutions in policing through technology and management, he said.

The minister was speaking at the inauguration of the second conference of young Superintendents of Police. Insisting on promoting good morale in the forces, he advised senior police officers to behave in a respectable and decent manner with their sub-ordinates and those in the constabulary.

Interacting with the SPs and Commandant rank officers of various state police and central paramilitary forces, Singh said the menace of spreading malicious news and rumours using various social media platforms is a “big challenge”.

Tech-savvy police force imperative to deal with growing complexity of crimes- Home Minister, Rajnath Singh

FICCI-EY report: Predictive Policing tech to enhance homeland security

NEW DELHI, 26 July 2018: Union Home Minister, Mr. Rajnath Singh, today envisioned a tech-savvy police force capable of providing security to the citizens even as the physical and emotional needs of a policeman are given the care they deserved from senior officers.

Inaugurating the **1st Police Expo 2018 & 2nd YOUNG Superintendents of Police Conference 2018**, organized by **FICCI and Bureau of Police Research & Development (BPR&D)**, on the theme of '**Predictive Policing & Contemporary Challenges for Indian Police Forces**', **Home Minister Mr. Rajnath Singh** said, "Predictive policing required modern technological capability and weapons to deal with the complex crimes that pervade in society".

Talking about the usage of social media and internet, the Home Minister said that handling social media is a huge challenge and "we must ensure maximum positive use of social media".

He also commended the use of less-lethal and non-lethal weapons along with modern weapon systems, use of drones and forensic technology to strengthen the security system.

Mr. Singh laid stress on understanding the emotional and physical constraints and the workload under which the police force has to operate. The Home Minister urged the senior police officers to consider induction of talented students of engineering colleges, IITs and IIMs as interns in police organisations to give them first-hand knowledge of the challenges and requirements of a modern police force so that they could utilize their skills to develop the required technologies.

On the occasion, the Union Home Minister released the FICCI - EY Report '*Predictive Policing and way forward*'.

Mr. Rajiv Jain, Director, Intelligence Bureau, advised the young police officers to make the optimal use of the technologies being made available by the government to ensure basic policing in the country.

Dr. A. P. Maheshwari, Director General, BPR&D emphasised the role of R&D and data analytics to develop an integrated technological system for dealing with the violation of law and crimes. He said that the Bureau would soon launch a pan-India Crime Victim Survey to gauge the perception of the people with regard to the efficacy of technological applications and their utility.

This is the first time that an expert Screening Committee has been set-up by BPR&D to evaluate the products and technologies offered by industries for subsequent field trials and pilot projects. The aim is to ensure better customization and adoption as per the requirements of Indian police forces.

Mr. Y. K. Modi, Past President FICCI & Executive Chairman, Great Eastern Energy Corporation Ltd. underlined the need to implement police reforms in states and enhance the remuneration of police personnel for effective policing. "**The private sector was keen to collaborate with the police force to beef-up the security of the country and its citizens,**" he said. Mr. Modi added that the internal security and law and order was vital for economic progress and creation of jobs.

Mr. V. H. Deshmukh, ADG, BPR&D and **Mr. Rahul Chaudhry, FICCI Homeland Security Chair** also shared their perspectives on the subject.

The two-day Expo will deliberate on 'Technologies for Predicting Offenders, Predicting Perpetrators Identities & Predicting Crime Victims'; 'Safe Cities v/s Smart Cities'; 'Public Procurement in Internal Security -Way Ahead'; 'Predictive Policing and Emerging Trends in Cyber Crime'; 'Next Generation Technologies for SMART Policing'; and 'Predicting Cyber Crime Against Women'.

Besides the conference, the event comprises a wide exposition of technologies, products and solutions providing a unique B2G platform for Industry and Government.

The **FICCI - EY Report** presents an overview of the prevalence of predictive policing solutions in India, the challenges being faced by Indian agencies and some notable case studies for predictive policing and related projects that have been undertaken by agencies across the country. Predictive policing is indeed the next step of smart policing that enables the agencies to deliver services efficiently and proactively.

Tech-savvy Police Force Imperative to Deal with Growing Complexity of Crimes: Rajnath

Hindustan Samachar, Jul 26, 2018

Inaugurates 1st Police Expo 2018 and 2nd YOUNG Superintendents of Police Conference 2018 New Delhi, July 26 (HS): Union Home Minister Rajnath Singh today envisioned a tech-savvy police force capable of providing security to the citizens even as the physical and emotional needs of a policeman are given the care they deserved from senior officers. Inaugurating the 1st Police Expo 2018 and 2nd YOUNG Superintendents of Police Conference 2018, organized by FICCI and Bureau of Police Research and Development (BPR&D), on the theme of 'Predictive Policing and Contemporary Challenges for Indian Police Forces', Home Minister Rajnath Singh said, "Predictive policing required modern technological capability and weapons to deal with the complex crimes that pervade in society". Talking about the usage of social media and internet, the Home Minister said that handling social media is a huge challenge and "we must ensure maximum positive use of social media". He also commended the use of less-lethal and non-lethal weapons along with modern weapon systems, use of drones and forensic technology to strengthen the security system. Singh laid stress on understanding the emotional and physical constraints and the workload under which the police force has to operate. The Home Minister urged the senior police officers to consider induction of talented students of engineering colleges, IITs and IIMs as interns in police organisations to give them first-hand knowledge of the challenges and requirements of a modern police force so that they could utilize their skills to develop the required technologies. On the occasion, the Union Home Minister released the FICCI – EY Report 'Predictive Policing and way forward'. Rajiv Jain, Director, Intelligence Bureau, advised the young police officers to make the optimal use of the technologies being made available by the government to ensure basic policing in the country. Dr. A. P. Maheshwari, Director General, BPR&D emphasised the role of R&D and data analytics to develop an integrated technological system for dealing with the violation of law and crimes. He said that the Bureau would soon launch a pan-India Crime Victim Survey to gauge the perception of the people with regard to the efficacy of technological applications and their utility. This is the first time that an expert Screening Committee has been set-up by BPR&D to evaluate the products and technologies offered by industries for subsequent field trials and pilot projects. The aim is to ensure better customization and adoption as per the requirements of Indian police forces. Y. K. Modi, Past President FICCI and Executive Chairman, Great Eastern Energy Corporation Ltd. underlined the need to implement police reforms in states and enhance the remuneration of police personnel for effective policing. "The private sector was keen to collaborate with the police force to beef-up the security of the country and its citizens," he said. Modi added that the internal security and law and order was vital for economic progress and creation of jobs. V. H. Deshmukh, ADG, BPR&D and Rahul Chaudhry, FICCI Homeland Security Chair also shared their perspectives on the subject. The two-day Expo will deliberate on 'Technologies for Predicting Offenders, Predicting Perpetrators Identities and Predicting Crime Victims'; 'Safe Cities v/s Smart Cities'; 'Public Procurement in Internal Security –Way Ahead'; 'Predictive Policing and Emerging Trends in Cyber Crime'; 'Next Generation Technologies for SMART Policing'; and 'Predicting Cyber Crime Against Women'. Besides the conference, the event comprises a wide exposition of technologies, products and solutions providing a unique B2G platform for Industry and Government. The FICCI – EY Report presents an overview of the prevalence of predictive policing solutions in India, the challenges being faced by Indian agencies and some notable case studies for predictive policing and related projects that have been undertaken by agencies across the country. Predictive policing is indeed the next step of smart policing that enables the agencies to deliver services efficiently and proactively.

Union Home Minister says Technology Key to Policing in Modern Era

Delhi, NCR News, Jul 26, 2018

Union Home Minister, Rajnath Singh has called upon the police organisations to collaborate with reputed institutes such as the IITs and IIMs for innovative solutions in technology and management. He said students from these institutes should be invited for internship every year so that constraints can be overcome and new technologies developed.

“Based on your requirements, you can collaborate with various institutions for research and developing technological solutions and training,” said Rajnath Singh, inaugurating the 2nd Conference of Young Superintendents of Police, being organized by the Bureau of Police Research & Development (BPR&D) here today. “If we make coordinated efforts and share among ourselves the various issues, problems, failures and success, we can improve our efficiency and effectiveness in managing law and order, border guarding, terrorism and extremism,” he added.

The Union Home Minister said adoption of technology will spur indigenous manufacturing and cut imports. “We are dependent on import of arms and other advanced equipments to a large extent. We can focus on indigenous manufacturing of such advanced technologies in collaboration with specialized institutes keeping in mind the special features we require. Thus we will develop in-house capacity and reduce dependency on imports,” said Singh. “We must make best use of the presently available technologies and think of out-of-the-box ideas to find problem based solutions,” he added.

The Union Home Minister said the police forces are saddled dealing with complex crimes and criminals armed with automatic weaponry. “We should focus on monitoring and analysis of crimes and develop such methodologies and techniques that crime can be nipped in the bud. “Many agencies and organisations are trying to develop crime data analytics software. This will result in Predictive Policing, which will not only help check crimes but also keep tab on terrorist activities and Naxal attacks. BPR&D has shared a project study report on 'Establishing Social Media Labs and collection of intelligence from the social media' with the State Police Forces,” said Singh.

The Union Home Minister said we are making effective use of technology to secure our vast coastline. “We have a multi-dimensional arrangement comprising the Navy, Coast Guard and Marine Police Forces for coastal security. Under the Coastal Security Scheme initiated by the MHA in 2005-06, fishing boats and trawlers have been equipped with Radio Frequency Detection System and GPS based techniques. BPR&D is providing training component to the National Academy of Coastal Policing, where coastal policing standards are at par with the best in the world,” said Rajnath Singh.

The Union Home Minister said the Government is committed to pursuing the Police Modernization programme vigorously. “We have provided the police forces with modern SX-95 and Breta weapons. To deal with crowd management and public outrage, police forces need to use an array of lethal and non-lethal weapons. BPR&D has undertaken a research project on the development and testing of lethal and non-lethal weapons,” he said. “Drones or UAVs have emerged as a useful new technology in policing. Ministry of Civil Aviation has constituted a Task Force in which BPR&D is a key participant, to prepare a roadmap for application of UAVs,” he added.

Singh said technology is also altering the crime investigation procedures. “The Cabinet recently gave its approval to a bill that would make DNA finger printing as a valid evidence. Rape detection kits are being provided in every district. Cyber Forensic Cell is also being strengthened. Police Forces are being encouraged to develop mobile apps to provide various services to the citizens,” he said.

Speaking on the occasion, Director, Intelligence Bureau, Rajiv Jain said the Government's resolve towards Police Modernization is evident from the fact that the Prime Minister Narendra Modi has made it a point to spend two-to-three days with the police officers during the annual DGPs Conference.

In his address, Director General, BPR&D, Dr. AP Maheshwari said technology has vastly improved policing and it is being used to provide Citizen Centric Services, implement the Safe Cities & Smart Cities projects and Social Media Analytics.

The two-day conference is being attended by over 100 Superintendents of Police and senior officers from the States and CAPFs. The closing address at the conference would be delivered by Lt. Governor of Puducherry, Dr. Kiran Bedi tomorrow.

Kiran Bedi holds out Self-discipline Principle for Young SPs at Police Expo 2018; Sets out daily Schedule to Perform Duty Better

NEW DELHI, 27 July 2018

The Lt. Governor of Puducherry, Dr. Kiran Bedi, today set a virtual hour-by-hour time-table for young Superintendents of Police for disciplining themselves and be ready for the day to deal with crime.

"No crime can happen when you have an SP who begins the day at 5 in the morning, ideates in quietude for an hour, gets a news updates by 7, leaves home at 8 for a police station in the jurisdiction to interact with his team, learning from them, advising them. By 10 you are done and ready to employ the technology and tools at your disposal to deal with crime," she told police officers while addressing the valedictory session of the **Police Expo 2018 and Young SPs Conference 2018, organised by the Bureau of Police Research & Development (BPR&D) and FICCI** here today.

The secret of good policing was to set oneself free and not be enslaved. "Do not forget the purpose of your service to the country, family and everything else comes later. Uphold and implement the law and deal with crime, don't wait for orders to address crime," she said, adding that if only the young SPs began their day correctly and got to the field by 9AM, India would be a different country.

Dr. Bedi said that police officers needed to become networked, use the social media correctly, enjoy work and remain updated with judgements and laws of the land.

She advised BPR&D to quickly get on to an online training platform and collaborate with training academies for the benefit of the police force. **"BPR&D could well do an IT certification training programme in partnership with FICCI"** as this would benefit the users to use technology optimally, she said.

On the occasion, an MoU was signed between BPR&D and India Police Foundation on a standardisation and accreditation scheme for raising quality standards of police governance and service delivery.

BPR&D Director General, Dr. A P Maheshwari, underlined the need for state-level R&D units for undertaking data analytics and synergise the efforts of the scholars and policemen. He also suggested vertical integration of experts to undertake R&D. Science graduates and post-graduates could be employed for analysing data on crimes, he added.

FICCI Secretary General, Mr. Dilip Chenoy, said FICCI would be happy to further strengthen the collaboration with the police in beefing up its capabilities for the safety and security of the people.

BPR&D Additional DG, Mr. V H Deshmukh and FICCI Homeland Committee Chair, Mr. Rahul Chaudhry, also shared their perspectives on the subject.

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