


# Intelligence Gathering

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- 
- ▶ Intelligence is the product resulting from the collection, collation, evaluation, analysis, integration, and interpretation of collected information.

# Intelligence Gathering Cycle



# Need

- ▶ To Combat various situations like,
  1. Poaching
  2. Illegal Mining
  3. Illicit Felling
  4. Encroachment
  5. Forest Fire
  6. Disease Spread etc.

# Example: Tiger poaching cases



# Tiger Body Parts Trafficking Routes



Tiger Body Part Trafficking Routes

# Multiple Agencies

- ▶ WCCB (WILDLIFE CRIME CONTROL BUREAU)
- ▶ TRAFFIC INDIA (TRADE RECORD ANALYSIS OF FLORA AND FAUNA IN COMMERCE)
- ▶ Others : CBI, Interpol, SSB, Local Police, ITBP, BSF.

# Methods

- ▶ Art and Science.
- ▶ Liaisoning with local works well.



# Technology in **Prevention** of Wildlife Crime

# Electronic E-eye



- Monitoring the movement of wild animals of a specific size.
- Monitoring the movement of staff
- Monitoring the movement of poachers.

# UAV- Drone



- Monitoring the movement of wild animals of a specific size.
- Monitoring the movement of staff
- Monitoring the movement of poachers.

# Mikroopters



Mikroopters are universal aerial platforms that hover. They can identify a position and hold it as long as necessary to identify images, collect data, or calculate distances. They are equipped with GPS, compasses, altitude control, telemetry

# Camera Traps



- Capturing images of Wildlife.
- Capturing the images of staff passing through the camera
- Capturing the images of poachers passing through the camera

# Acoustic Traps



Acoustic Traps use “echo technology” to monitor sharp disturbances such as gun shots, chain saws, truck engines, blasts etc. using monolithic sensors.

# Metal Detectors



Metal Detectors used in the protected areas help locating leg hold traps and wire snares fixed by poachers.

# Use of Automated Spray Gun



Use of automated spray guns using odorless mist which is not visible otherwise. Handheld Scanners are used to detect the suspects in a mob when needed.

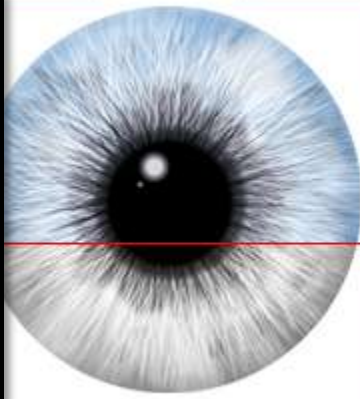


# Video/CCTV camera



Use of Video Camera/CCTV Camera attached to matching software to detect habitual offenders moving within the vicinity of protected areas.

# Biometric Details



Biometric database of habitual offenders on a shareable server would become handy for enforcement officials to detect habitual offenders when detected.

# SMART- Spatial Monitoring and Reporting Tool



One Solution

SMART empowers protected area managers by converting patrol data and intelligence into useful information about poaching and helping to plan a strategic response.

# GPS instrument

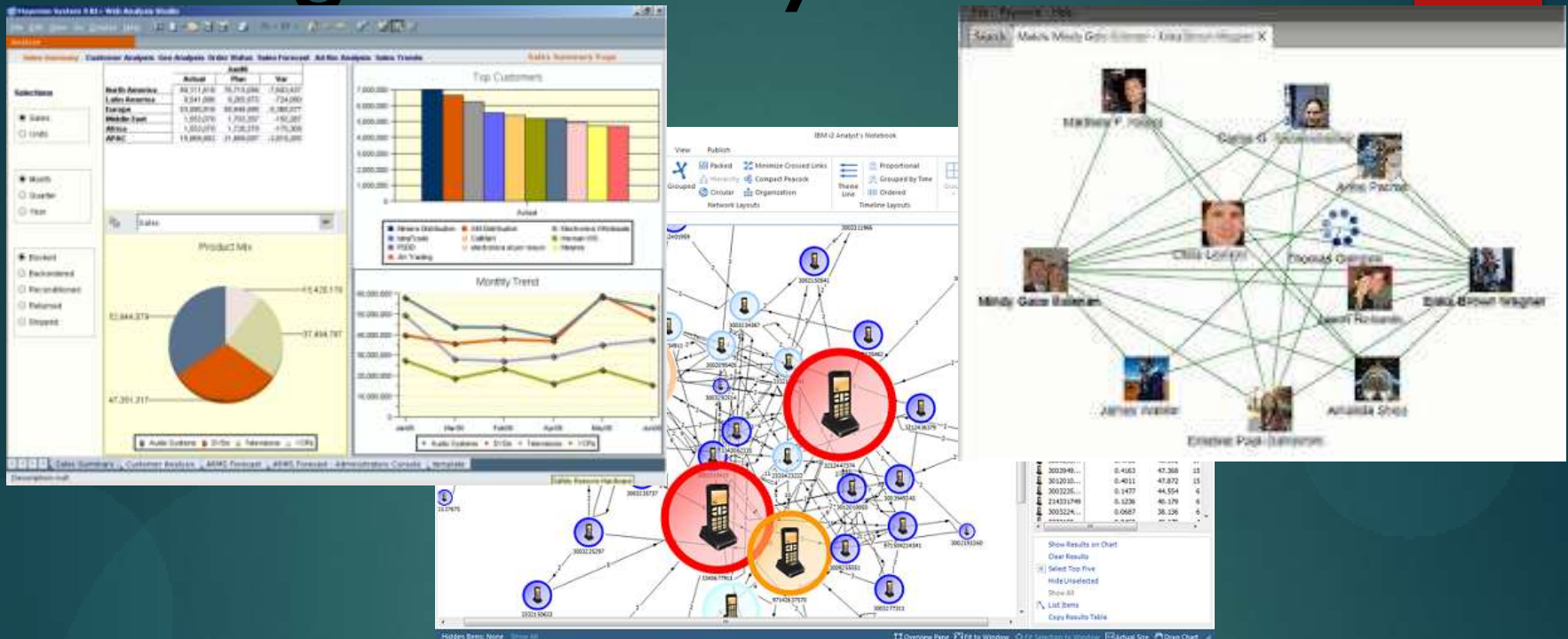


Hand held GPS instruments are used to locate geographical locations on the ground

# Illegal Trade Database

- ▶ Database on illegal trade, crime and criminals are essential to initiate preventive steps. Most of the database available are from voluntary contributors limited to specific countries.
- ▶ ERIS- Elephant Trade Information System (Managed by TRAFFIC on behalf of the CITES Parties) is used to track confiscated records involving elephant products.

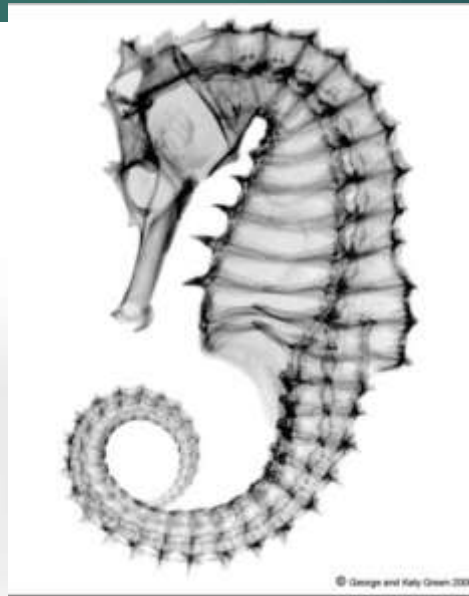
# Intelligence Analysis Software



Intelligence Analysis Software is used to analyze information collected from overt and covert sources to actionable intelligence which can be used to prevent crime

# Technology in **Detection** of Wildlife Crime

# X-Ray Scanners



X-Ray Scanners at the transit areas are placed to scan baggage's to detect any contraband in transit



# Detection using Mobile Phones



### Call Detail Records

LATITUDE	LONGITUDE	DATE	TIME	NUMBER	NAME	DURATION
44.50880 N	73.18223 W	1/28/2008	0917	801-555-1234	Chittenden Bank	0:10:17
44.50880 N	73.18223 W	1/28/2008	0945	801-555-8673	Peopole LaFue	0:01:01
44.50880 N	73.18223 W	1/28/2008	0946	801-555-9201	Harvey Strappeman	0:06:32
44.27834 N	73.21363 W	1/29/2008	2205	801-555-7758	Verizon Voice Mail	0:01:13
44.27834 N	73.21363 W	1/29/2008	3532	801-555-4492	Widgetz LLC	0:08:47
44.27834 N	73.21363 W	1/29/2008	2208	801-555-7758	Verizon Voice Mail	0:00:36
44.50880 N	73.18223 W	1/30/2008	0838	202-555-1818	British Embassy	0:18:12
44.27834 N	73.21363 W	1/30/2008	2208	801-555-7758	Verizon Voice Mail	0:00:53
44.27834 N	73.21363 W	1/30/2008	2211	801-555-8673	Peopole LaFue	0:06:18
44.50880 N	73.18223 W	1/31/2008	0908	202-555-1843	British Embassy	0:03:25
44.50880 N	73.18223 W	1/31/2008	0908	416-555-9834	British Embassy	0:12:04
44.4143 N	73.09641 W	1/31/2008	1047	801-555-8201	Harvey Strappeman	0:01:02
44.4143 N	73.09641 W	1/31/2008	1050	313-555-2761	M. Ferrel	0:09:06
44.28285 N	73.18223 W	1/31/2008	1127	801-555-9201	Harvey Strappeman	0:00:38

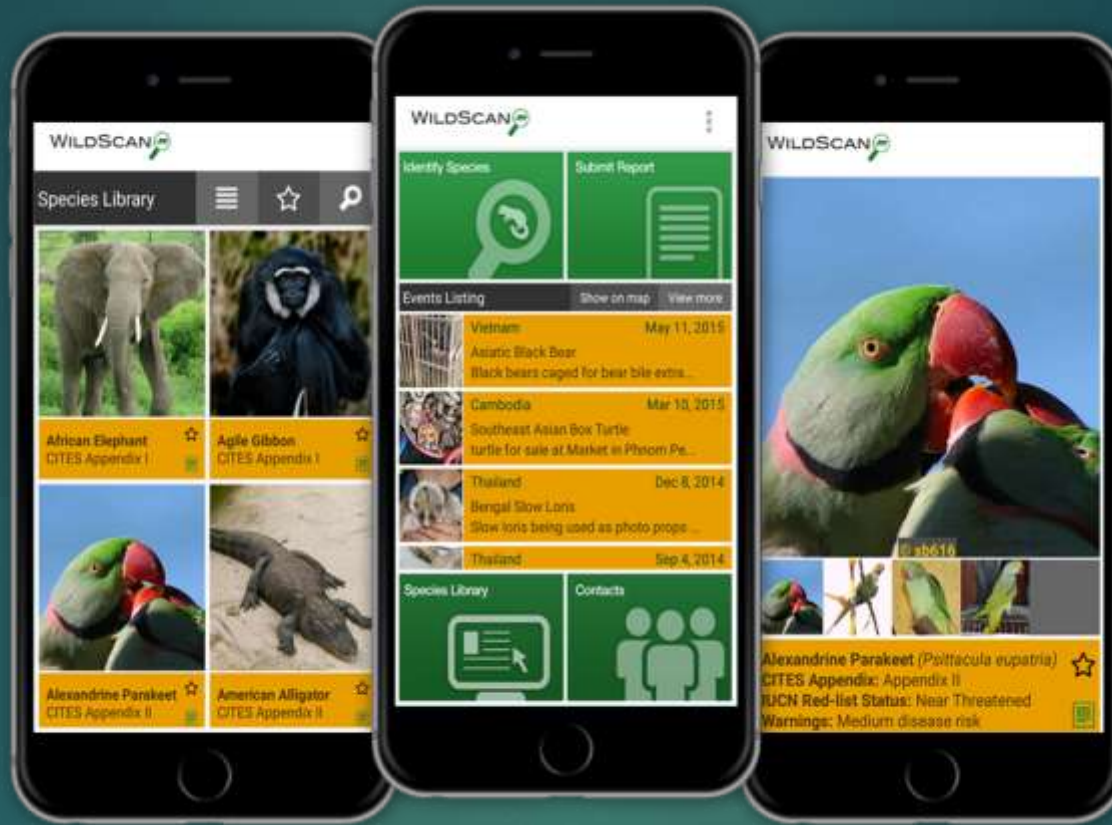
Technical Surveillance and Call Data Records used to detect suspects involved in illegal wildlife crime

# Cyber Patrolling over E-Commerce sites



**Online illegal wildlife material offered for sale is detected using Cyber patrolling with keywords based search**

# Mobile based Applications



Mobile based application is used to identify species on detection of offence Eg. **WILDSCAN**

# Illegal Wildlife Trade in the Darknet



- The **dark** web is the World Wide Web content that exists on darknets, overlay networks which use the public **Internet** but which require specific software, configurations or authorization to access.
- Darknet hubs and market place are used by illegal wildlife traders for illegal transactions

# Technology in **Investigation** of Wildlife Crime

# Detection using Mobile Phones



LATITUDE	LONGITUDE	DATE	TIME	NUMBER	NAME	DURATION
44.50880 N	73.18223 W	1/28/2008	0917	801-555-1234	Chittenden Bank	0:02:17
44.50880 N	73.18223 W	1/28/2008	0940	801-555-8673	Peopole LaFue	0:01:01
44.50880 N	73.18223 W	1/28/2008	0945	801-555-9201	Harvey Strappeman	0:06:32
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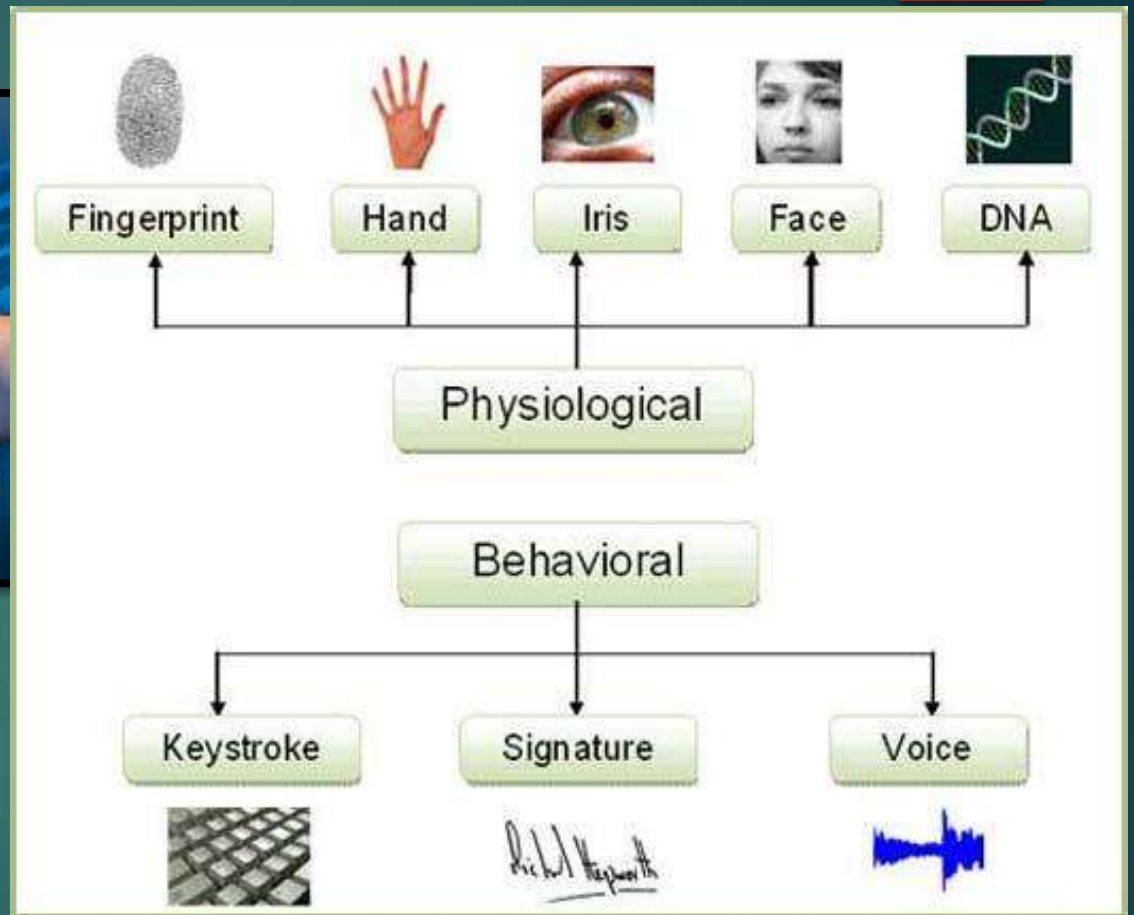
- Technical Surveillance and Call Data Records are used to investigate linkages involved in the criminal act.
- Identification of location of criminal using call data.
- Identification of suspects using call data.

# Digital Forensics



Evidences are extracted from digital media during investigation of crime

# Biometrics for details of criminals





# GPS instrument



Hand held GPS instruments are used to map locations of scene of crime and movement location of the criminals

# DNA Finger printing

- ▶ DNA fingerprinting allows identification of an individual or species.
- ▶ Individual identification for matching tissue samples from an illegal kill site to samples associated with suspect.
- ▶ Species identification of unknown tissue samples involved in illegal commercialization and poaching.
- ▶ Includes identification of mixed game products – packed meats.
- ▶ Sex identification to enforce the violations of the wildlife Law.

**Thank You**

