

75  
आज़ादी का  
अमृत महोत्सव



वसुधैव कुटुम्बकम्  
ONE EARTH • ONE FAMILY • ONE FUTURE



# DFSS REPORT

**Directorate of Forensic Science Services**  
Ministry of Home Affairs, Govt. of India  
8th Floor, Block No. 9, CGO Complex, New Delhi-11003

Contact : 011-24365835, Fax :24362819,  
Website: <http://dfs.nic.in>

## **PREFACE**

*It gives us immense pleasure to share with all officers and staff that we are passing through an era of sheer development and meaningful progression of forensic science for connecting ourselves with the shining future. We had seen the time during the COVID-19 pandemic between 2020-2021 with our perservance and dedication towards our duty for our nation. Now, the time has come, where we should mark some of our excellent efforts and progressive outcomes in the form of a report for the duration 2018-22. During this journey of 05 years, which were full of challenges and real time obstacles under the unwarranted impact of virus but we had worked together to make it worthy for all of us. We know that we had faced many hurdles and tasks in our regular working but as a team, we had conquered them all.*

*This 'DFSS Report 2018-22' is a composite outlook of all our efforts and performed duties by all our scientists and staff who had paved our way on the success grounds. It is the first of its kind initiative that all these efforts and workmanship is now compiled to make this report. I am overwhelmed to share that we had put our best efforts in conjoining all the hark work, enthusiastic initiatives and challenging tasks done by our officers and staff of all 07 CFSs in the country. Even now, we recite the pledge that we will keep putting our best efforts in dispensing our duties and keep this pace of compilation of our work performances in form of data spectrum for years to come and share with all.*

*On this onset, we would like to tell that we are working towards a safer and justice oriented approach for all the tasks in our end. We, as a part of forensic fraternity feel proud to be in it.*

*The time has come that we should go one step further to explore our new dimensions and new age ideas to strengthen our forensic fraternity in all working fields to make a glorious future for us and for those who are yet to come and join us in this ride as a contributor in CFSs, State FSLs, Indian Law Enforcement system comprising of police, vigilance, IB, CBI, NIA and various other agencies that are working out on their fields and need our scientific aid in completing the investigations in hand and finally justice to the society at large.*

*Thanks*

*We, the One*

***Message from The Director cum Chief Forensic Scientist, DFSS HQtr., New Delhi, India***



It is a matter of great pride for me to express my sincere gratitude to all the Scientists, Members of Staff, Forensic Professionals of all 07 CFSLs and all staff members of DFSS Hqtrs, New Delhi for their continued efforts towards constantly maintaining quality, timeliness and credibility in forensic work force to serve the Criminal Justice Delivery System of our country.

It's been a heartfelt satisfaction to me that we had come along way since the inception of this Directorate of Forensic Science in the year 2002. I feel that this Directorate had acted as a cohesive link between the Judiciary, State FSLs, CFSLs Investigation agencies, police and the Universities that are running Forensic Science Courses in India. This Directorate had always kept the active efforts going on in the development of Forensic Science in India and aiding the developing countries to strengthen their forensic science setups through consultancy. I am filled with enthusiasm and inspiration to realize that, even when the whole world is going through a very difficult phase due to COVID-19 pandemic, that time our scientists have worked more dedicatedly for uninterrupted deliverance of their services towards criminal justice system. Even with all the constraints due to COVID-19 situation, our dedicated and committed staff members have worked hard to contribute their best for the development of modern State-of-the-art facilities in all CFSLs under DFSS and they keep on putting extra efforts to strengthen the standards of our laboratory.

I felt encouraged and joyful that our staff members, scientists and forensic professionals are continuously working on advancing their intelligence, knowledge and skill sets to combat with the ever changing scenario of criminal activities involving advance technologies, communication systems, spying gadgets, dark web encryption software, etc. Some of our best and significant works done by DFSS and CFSLs during 2018-2022 years are described in this DFSS Report.

Once again, I wish them success in all their endeavours in respective field and convey my best wishes for the prosperous years to come.

**(Dr. S K Jain)**  
**Director cum Chief Forensic Scientist**  
**New Delhi**

**COMPOSITION OF REPORT**

<b>Sr. No.</b>	<b>Content</b>	<b>Page No.</b>
1.	Preface	I
2.	Message from Director cum CFS	II
3.	Prelude –Objectives	1-2
4.	Historical Background	2-3
5.	Organizational Chart	4
6.	Jurisdiction of CFSs	5
7.	Charter of Duties	6
8.	Forensic Setup in India	6
9.	Services	7
10.	Advanced Technologies Acquired	7
11.	Transfer of Technologies to States	7
12.	DFSS Laboratories	8-12
11.	Divisions of CFSs	13-17
12.	Unique Facilities	18-20
13.	Case Statistics	21
14.	Court Evidence	21
15.	Scene of Crime	21
16.	Research & Development	21
17.	Capacity Building	22-23
18.	Lecture Delivered and Training received	23
19.	E-activity	24
20.	Cases of National Importance	25-26
21.	Manpower	27
22.	Status of Placement & Attributions	27
23.	Modified Assured Career Progression Scheme	27
24.	Recruitment Rules (RRs)	28
25.	Budget & Expenditure	29
26.	Completed Project	30-33
27.	Major Achievements	34-37
28.	International Cooperation	38
29.	LIST OF UNION HOME MINISTER AWARDEES OF CFSs	39-40



## **PRELUDE**

**“When Justice Prevails, the society grooms with a positive perspective”**

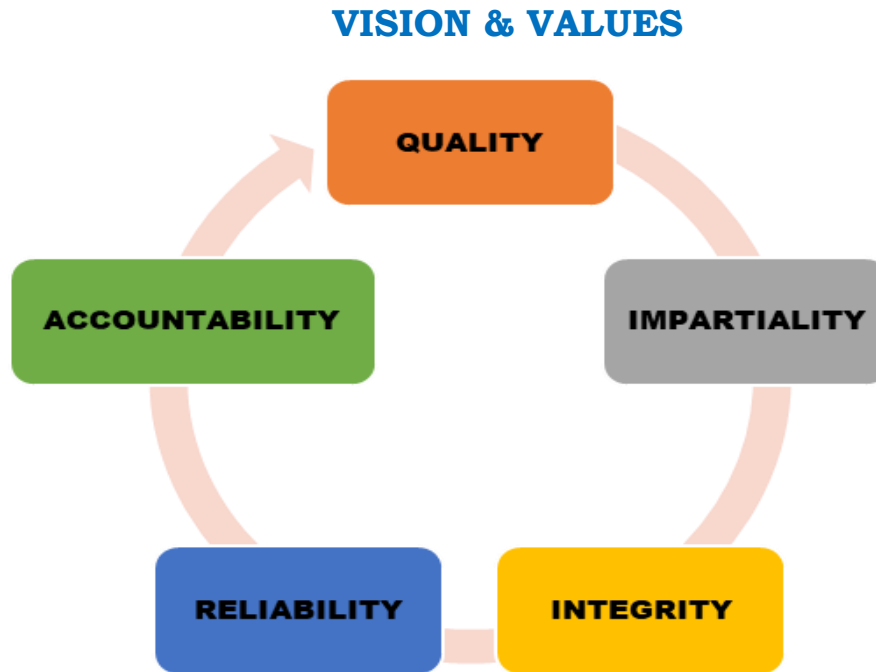
## **OBJECTIVES**

The Directorate of Forensic Science Services (DFSS) is a nodal organization of the Ministry of Home Affairs, Govt. of India to develop and broadcast paramount forensic science services in the country to serve the Indian criminal justice delivery system. Since its inception in the year 2002, on bifurcation from the BPR&D, New Delhi, DFSS is relentlessly working towards delivering the best and irrefutable services to different crime investigation agencies. The major objectives for which DFSS was established are as follows:

- ◆ To provide high-quality, on-time forensic services to the criminal justice delivery system by creating capacity & capability at the central level, providing technical & financial support and assistance to forensic institutions in the States and UTs.
- ◆ To encourage research & development by creating new technologies in various areas of forensic science, strengthen forensic services by arranging and instituting financial grants and fellowship schemes for intramural and extramural R&D schemes.
- ◆ To establish connections with national & international scientific, technical, forensic institutions and universities for cooperation through transfer of technology, skill development, exchange of scientific personnel and sharing of information.
- ◆ To promote quality assurance and quality control in forensic testing by arranging technical and financial support for the development of forensic standards and uniform standard operating procedures.
- ◆ To disseminate and promote knowledge in the field of application of science & technology by supporting/organizing awareness programs, symposiums, seminars, hands-on workshops and national/international conferences.
- ◆ To formulate plans and policies to promote capacity building in forensic science in the country.
- ◆ To develop a national database on various forensic indices to control recidivism, repeat crimes and strengthen homeland security.
- ◆ To promote excellence in forensic services & R&D by instituting awards & incentive programs.

## MISSION

To develop an advanced, efficient, time bound and most trusted platform for complete range of Forensic science services catering different crime investigation agencies across the country.



- ♦ *To establish state of the art laboratories with best infrastructure and facilities at par with global standards.*
- ♦ *To facilitate quality control and quality assurance in Central and State laboratories with a team of highly qualified scientists, latest technology and international standards.*
- ♦ *To expand capacity and capability of Forensic fraternity through different human resource development initiatives.*

## **HISTORICAL BACKGROUND**

The position of Forensic Science Services available in the country and the inadequacies and obstructions that had blocked its modernization were examined by various committees from time to time. It was recommended that there was need to upgrade all round competency and functioning of Forensic Science Laboratories to improve the criminal justice delivery system throughout the country. It was also recommended that to ensure constant up gradation of Forensic Science activities at the National level there should be integration of all the Central Forensic Science Institutions under one umbrella under the Ministry of Home Affairs.

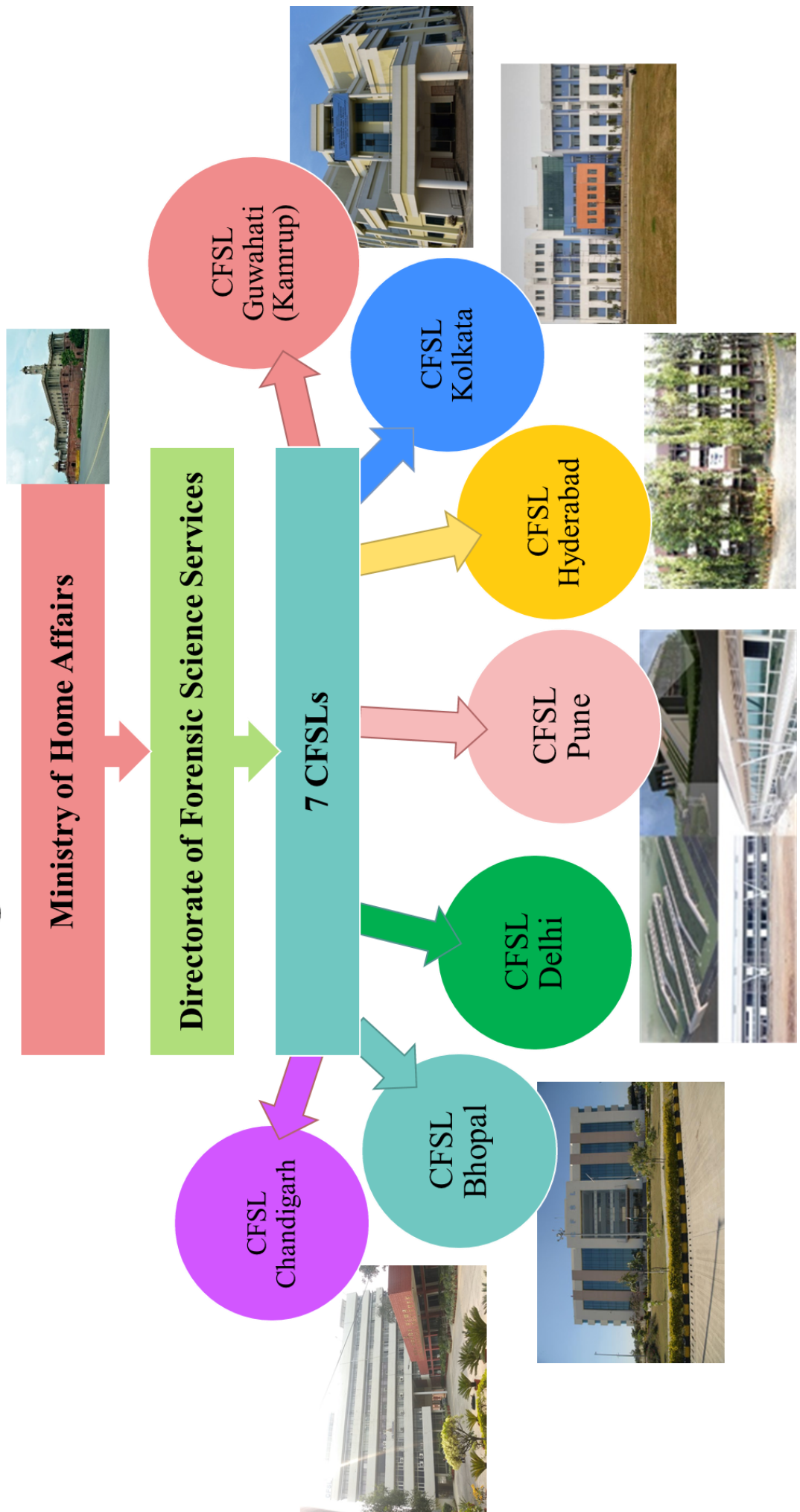
After carefully considering all the recommendations, Government of India decided to create a separate Directorate of Forensic Science in New Delhi under the direct charge of the Ministry of Home Affairs, Government of India. The Central Forensic Science Laboratories at Kolkata, Chandigarh and Hyderabad and Government Examiners of Questioned Documents at Kolkata, Shimla and Hyderabad have been placed under the Directorate of Forensic Science. The Directorate is headed by a Forensic Scientist who is designated as Director-cum-Chief Forensic Scientist. It had started its function from 1st April, 2003 at Block No. 9, CGO Complex, Lodhi Road, New Delhi. The Directorate of Forensic Science has now been re-named as Directorate of Forensic Science Services (DFSS).

The Directorate of Forensic Science Services (DFSS) is a nodal organization of Ministry of Home Affairs, Govt. of India to develop and disseminate paramount forensic science services in the country to serve the cause of criminal justice delivery system. It has been established in the year 2002 on bifurcation from the BPR&D, New Delhi based on the recommendations of National Human Rights Commission and the Padmanabhaiah Committee on Police reforms. DFSS is committed to work dedicatedly using high end technologies, complimented with a team of distinguished scientists to combat the challenges being witnessed in present-day crimes posing threat to the society and country.

<b>DFSS Headquarter New Delhi established</b>	<b>2002</b>
<b>About CFSLS under DFSS</b>	
CFSL Kolkata established	1957
CFSL Hyderabad established	1968
CFSL Chandigarh established	1972
CFSLs Bhopal, Pune & Guwahati established	2011
CFSL, Delhi (brought under the Administrative control of DFSS from CBI)	2022

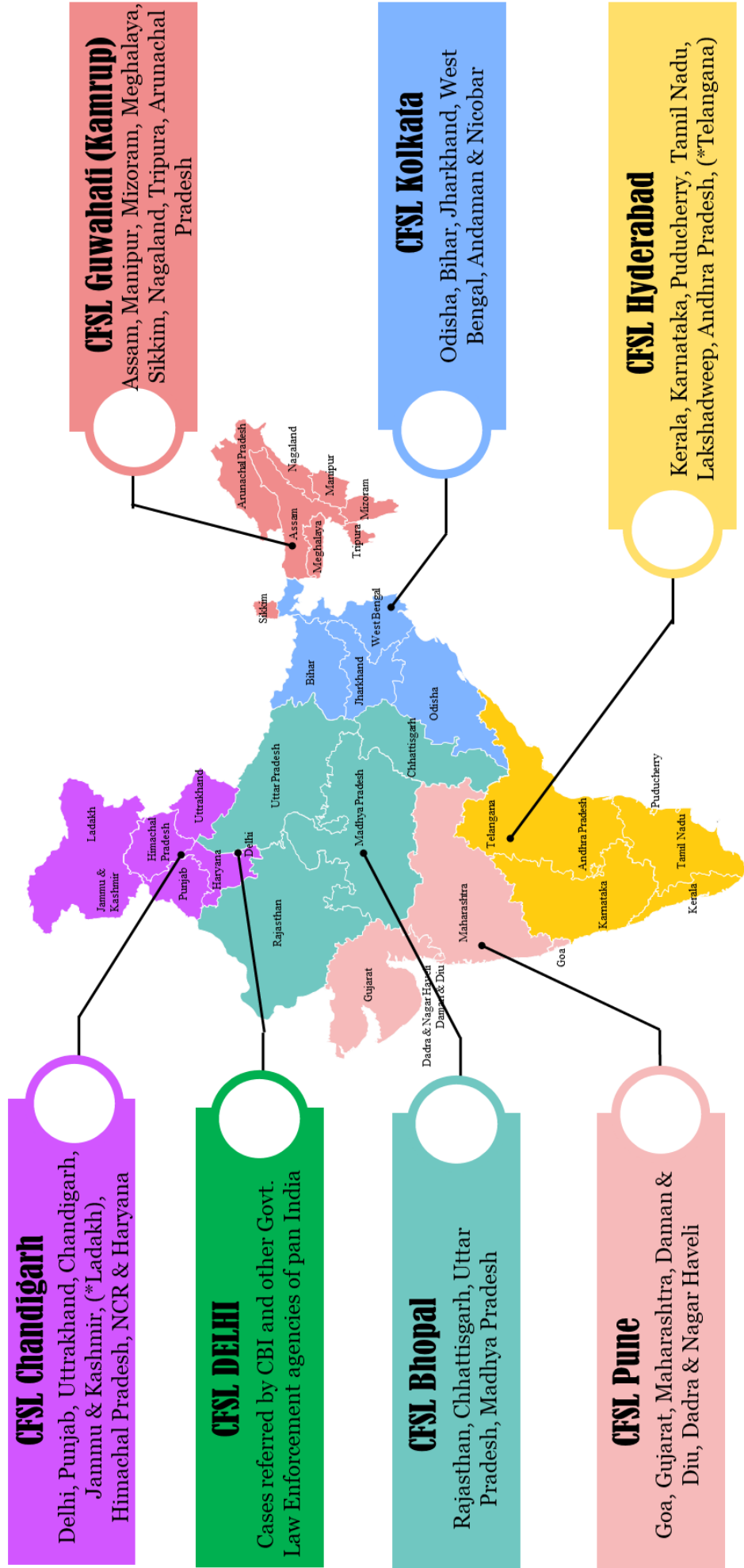
DFSS is constantly working to minimize the gap in technology and manpower in delivering time bound and accurate Forensic services by creating best in class infrastructure in major cities of the country. It is also actively involved in building human capacity through various training, conferences, workshops and awareness programs. DFSS strongly believes that by developing central and state laboratories and creating opportunities in the forensic disciplines, India can come up as a role model in delivering incredible services to judicial system and serve the mankind.

# Organization Chart





# Jurisdiction of CFSLs



\* Cases of State and UT also handled by CFSLs.

## **CHARTER OF DUTIES**

The Directorate of Forensic Science Services is responsible for performing following duties:

- 1) To provide high quality and on time Forensic Services to Criminal Justice Delivery System.
- 2) To develop new technologies and create new scientific knowledge.
- 3) To encourage Research & Development in various areas of forensic science
- 4) To establish linkages with National and International Scientific, Forensic Institutions and Universities.
- 5) To promote Quality Assurance and Quality Control in Forensic Testing.
- 6) To disseminate and promote knowledge in the field of application of Science & Technology.
- 7) To formulate Plan and Policies to promote capacity building in Forensic Science in the country.
- 8) To develop National database on various forensic indices.
- 9) To promote excellence in Forensic Services & R&D by instituting awards & incentive programs.
- 10) To assist and advice the Central and State Governments in all Forensic Science matters

## **FORENSIC SET UP IN INDIA**

Central Forensic Science Laboratories	<b>07</b>
State FSLs	<b>32</b>
Regional FSLs	<b>106</b>
Mobile F.S. Units	<b>552</b>
Total	<b>697</b>

## **SERVICES**

The various divisions of the laboratory examine different types of crime exhibits for its clients viz.

- Audio-Video authentication
- Ballistics
- Biology
- Chemistry
- Digital Forensics
- DNA Profiling
- Explosives
- Narcotics
- Physics
- Psychology
- Toxicology
- Speaker Identification/Facial Recognition
- Questioned Documents

## **ADVANCED TECHNOLOGY AQUIRED**

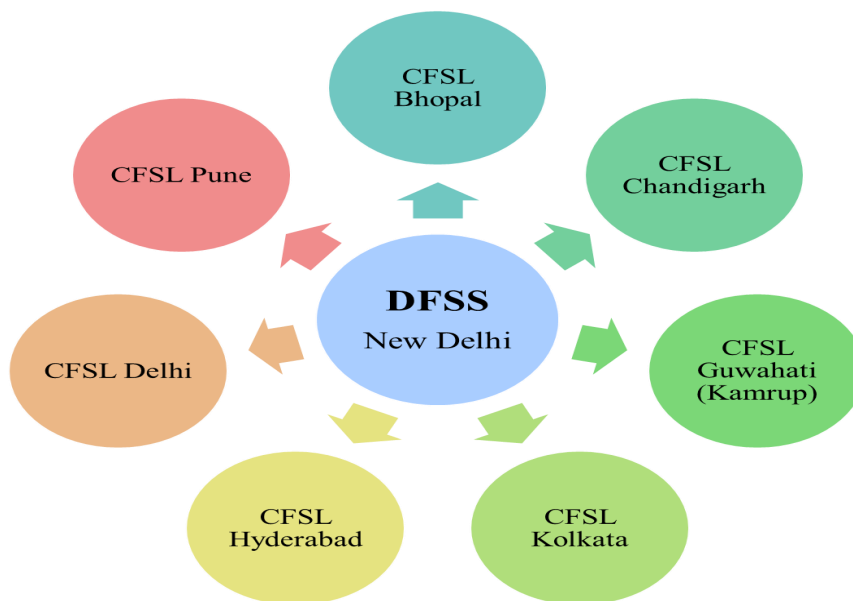
- DNA Analysis
- Computer Forensics,
- Audio-Video Authentication
- Speaker Identification
- Shooter Identification using SEM-EDXA.
- Automatic Firearm / Ammunition Database identification system by establishing IBIS.
- Facial recognition/ CCTV footage analysis
- Bullet Proof Material Testing
- Skull Superimposition
- The Four CFSs located at Chandigarh, Hyderabad, Delhi and Kolkata are accredited by NABL and following ISO-IEC 17025 international standards for quality control and quality assurance.
- The newly established CFSs are in the process of obtaining accreditation through NABL.
- Collaboration with Research & Academic Institutions like IITs, DRDO Labs, Universities, etc.

## **TRANSFER OF TECHNOLOGY TO STATE FSLs**

- ⇒ Audio-Video,
- ⇒ DNA Finger Printing,
- ⇒ Computer Forensics and other areas.

## **DFSS LABORATORIES** **(CENTRAL FORENSIC SCIENCE LABORATORIES –CFSLs)**

Under DFSS umbrella now there are 7 central laboratories :



### **CFSL KOLKATA**

The Central Forensic Science Laboratory (CFSL), Kolkata a premier forensic institution was established in 1957 under the aegis of Intelligence Bureau, and in 1973 it was brought under administrative control the Bureau of Police Research & Development (BPR&D) under Ministry of Home Affairs, Govt. of India, New Delhi. Since 2002, the laboratory is under the direct control of the Directorate of Forensic Science Services, WS Division, Ministry of Home Affairs, Government of India as a Scientific Department to provide scientific support and services to the investigating agencies for crime examination. Bihar, Jharkhand, Odisha, West Bengal, Andaman & Nicobar Islands are the jurisdictional states of CFSL, Kolkata. Construction of new building of CFSL Kolkata has been approved by MHA with an financial outlay of 87.82 Crore and is in now completed and ready to move in. CFSL Kolkata will be developed as repository of forensic indices for Explosive substances and Centre of excellence for Forensic Explosives.

### **CFSL DELHI**

The Central Forensic Science Laboratory, New Delhi was established in the Year 1968 as a scientific department to provide scientific support and services to the CBI investigation of crime. In Nov 2022, the CFSL, Delhi came under the administrative control of the Directorate of Forensic Science Services, Ministry of Home Affairs, Government of India, New Delhi. CFSL Delhi undertakes the scientific analysis of crime exhibits referred by CBI, Delhi Police, Judiciary and Vigilance Departments of Ministries & Undertakings & State/Central Govt. Departments.



## CFSL CHANDIGARH

This laboratory started as CID Scientific Section, in 1933. In 1961, it became a fully functional Forensic Science Laboratory of erstwhile Punjab at Chandigarh. The laboratory was taken over by the Union Territory of Chandigarh in 1966. Following its takeover by the Bureau of Police Research & Development on July 1, 1978, the Government of India renamed it Central Forensic Science Laboratory, Chandigarh. CFSL, Chandigarh is currently under the administrative control of the Directorate of Forensic Science Services, Ministry of Home Affairs, Government of India, New Delhi. Chandigarh, Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Delhi NCR & Uttarakhand are the jurisdictional states of CFSL, Chandigarh. (Ladakh cases are dealt with by CFSL, Chandigarh)

Later, with a view to increase efficiency and completion of investigations in such cases, as also pendency of DNA cases for examination at States/Union Territories, Government of India, MHA has sanctioned **₹99.76 crore** under Nirbhaya Fund scheme to CFSL Chandigarh for setting up of a State-of-the-art Sakhi-Suraksha advanced DNA forensic laboratory. The “Advanced Forensic DNA Laboratory” was Inaugurated on **23<sup>rd</sup> December 2019** by Shri Nityanand Rai, Minister of State for Home Affairs, Govt. of India & Smt. Kiran Kher, Member of Parliament, Chandigarh.



*Visit of Smt. Maneka Gandhi, Hon'ble Minister, Ministry of Women and Child Development of Advanced Forensic DNA Laboratory at CFSL, Chandigarh*



*Inauguration by Hon'ble State Home Minister Sh. Nityanand Rai & Member of Parliament, Chandigarh Smt. Kiran Kher.*



## CFSL HYDERABAD

The Central Forensic Science Laboratory, Hyderabad (CFSL, Hyderabad) was established in 1967 under the Intelligence Bureau and was brought under the administrative control of Bureau of Police Research & Development (BPR&D) in 1973 along with Central Forensic Science Laboratory, Kolkata. Initially the laboratory started functioning from the Chirag Ali Lane and shifted to its present spacious premises of 27 Acres in Ramanthapur in year 1982 which is in the vicinity of the Osmania University institutional area. Since 2002, the laboratory is under the direct control of the Directorate of Forensic Science Services, WS Division, Ministry of Home Affairs, Government of India as a Scientific Department to provide scientific support and services to the investigating agencies for crime examination. Andhra Pradesh, Telangana\*, Tamil Nadu, Kerala, Lakshadweep, Karnataka & Puducherry are the jurisdictional states of CFSL, Hyderabad.

Under the project, Cyber-crime Protection against Women and Children (CCPWC) under Nirbhaya Fund Scheme, MHA has approved setting up of a National Cyber Forensic Laboratory (**NCFL**) at CFSL Hyderabad with an outlay of ₹37.34 crore. NCFL(E) recently inaugurated by Shri Amit Shah, Hon'ble Minister of Home Affairs and the Minister of Co-operation of India, Government of India on **14.05.2022**.



**Inauguration of National Cyber Forensic Laboratory (NCFL (E)) at Hyderabad, Telangana by Hon'ble Home Minister Sh. Amit Shah**

## CFSL KAMRUP (GUWAHATI)

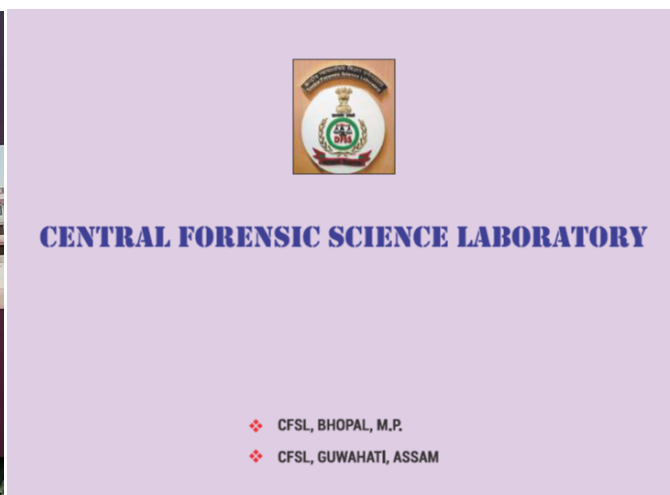
CFSL Kamrup is also established under XII<sup>th</sup> Five Year Plan Scheme of Directorate of Forensic Science Services entitled **‘Establishment of New Central Forensic Science Laboratories and Modernization of Existing CFSLs under the Directorate of Forensic Science Services’** of DFSS with an financial outlay of 50.07 Cr. Hon’ble Union Home Minister Shri Rajnath Singh laid the foundation stone of new building at Kamrup (near Guwahati) on **November 29, 2014**, and the constructed building was inaugurated by him on **March 06, 2019**. CFSL, Kamrup has the aim to propagate and carry out credible forensic science practices in the country, especially in the North-Eastern region.

The jurisdiction of CFSL, Kamrup is the eight North-Eastern states of India: Assam, Manipur, Mizoram, Meghalaya, Sikkim, Nagaland, Arunachal Pradesh and Tripura.

## CFSL BHOPAL

Central Forensic Science Laboratory (CFSL) formerly known as Central Forensic Institute was established in the year 2011 along with CFSL Pune and CFSL Kamrup (Guwahati), under the scheme of **‘Establishment of New Central Forensic Science Laboratories and Modernization of Existing CFSLs under the Directorate of Forensic Science Services’** under the DFSS, MHA, Government of India, with a financial outlay of 53.72 Cr. The new building of CFSL Bhopal was inaugurated by Hon’ble Union Home Minister, Shri Rajnath Singh on **March 06, 2019**.

The jurisdiction of newly established CFSL, Bhopal has been defined covering the states of Madhya Pradesh, Chhattisgarh, Uttar Pradesh and Rajasthan vide MHA Order No.25020/61/13/FW/MHA published in the Gazette of India dated 26.07.2013.



**Online Inauguration of new complexes of CFSL Bhopal and CFSL Kamrup (Guwahati) by Hon’ble Union Home Minister, Shri Rajnath Singh**



## CFSL PUNE

The CFSL Pune, under the administrative control of the Directorate of Forensic Science Services, Ministry of Home Affairs, Govt. Of India, New Delhi is established under XII<sup>th</sup> Five Year Plan Scheme of Directorate of Forensic Science Services entitled **‘Establishment of New Central Forensic Science Laboratories and Modernization of Existing CFSLs under the Directorate of Forensic Science Services’** of DFSS. The Ministry of Home Affairs has approved setting up of CFSL at Pune and it has been published in the Gazette of India, August 10, 2013. The Govt. of Maharashtra allotted 12 hectare (30 Acre) land at Nanoli tarfe Chakan, Maval, Pune District in 2011.

The new complex of CFSL Pune was inaugurated on **19<sup>th</sup> December 2021** by Shri Amit Shah, Hon'ble Minister of Home Affairs and the Minister of Co-operation of India, Government of India. The Central Forensic Science by using conventional and sophisticated instrumental methods.

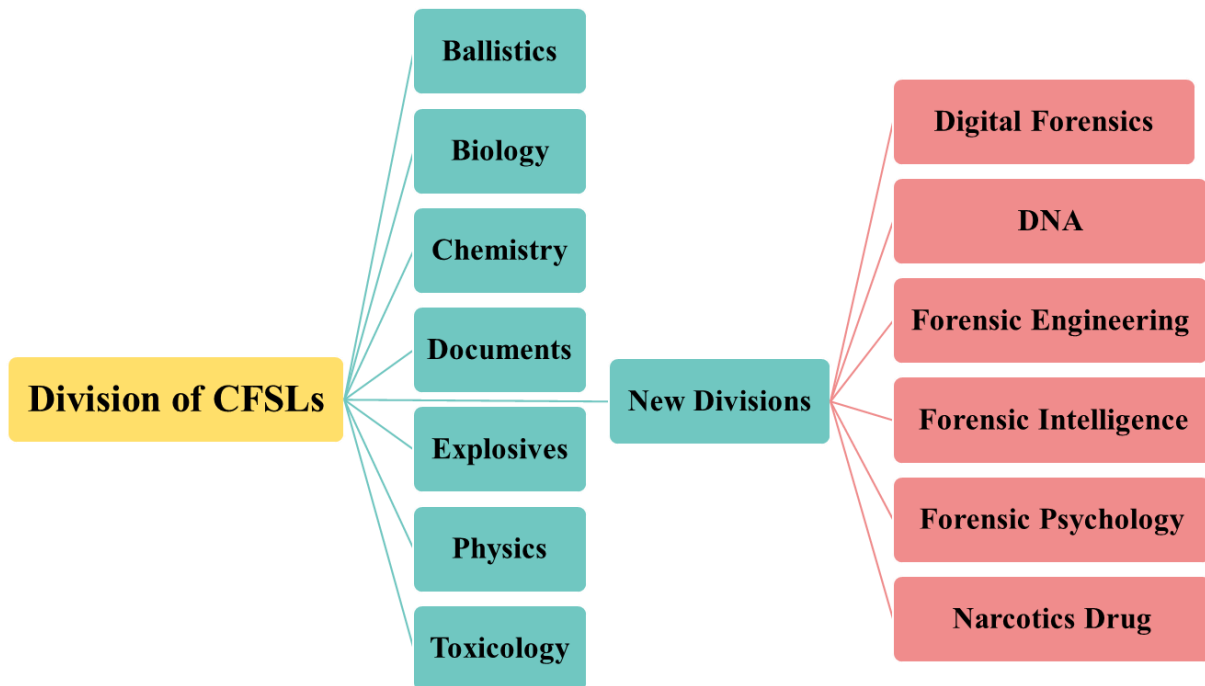


**Inauguration of CFSL Pune, Maharashtra by Hon'ble Home Minister Sh. Amit Shah**



## **DIVISIONS OF CFSLS**

There are total seven divisions in CFSLS viz. Ballistics, Biology, Chemistry, Documents, Explosives, Physics and Toxicology. With the rise in cyber-crime, Sexual assault and other non-conventional cases, a need of specialized domains dedicated to such areas was felt and hence new divisions have been established/ are being established in the CFSLS of DFSS complementing other divisions in solving cases.

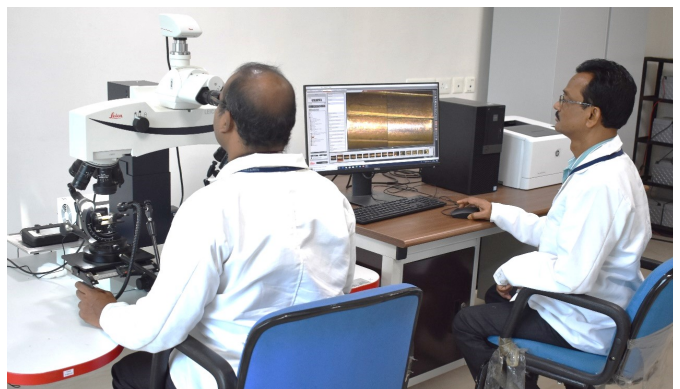


### **BALLISTICS DIVISION**

This department involves the identification and comparison of Firearms, ammunition and parts thereof, examination of target materials. The exhibits include standard small arms and ammunition of various make and caliber, homemade/improvised firearms and ammunition, bullets, pellets, wads, propellant, cartridge cases and the appliances used for the manufacture of firearm ammunition.



**IBIS (INTEGRATED BALLISTICS IDENTIFICATION SYSTEM)**



**COMPARISON MICROSCOPE**

## BIOLOGY/SEROLOGY DIVISION

This division involves Serology, Skull Superimposition & Identification, Portrait Building, Facial Reconstruction, Blood, Semen, Other Body Fluids/Stains, Tissue, Tooth, Bone, Hair, Plant, Diatoms, Fibre, Cord, Scene of Crime Examination etc.



*Scientist working in Biology Division*



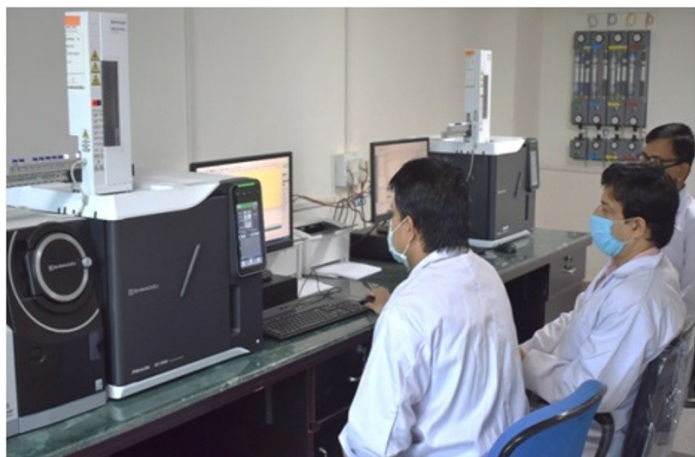
*Scientist working skull Superimposition and Identification*

## CHEMISTRY DIVISION

This division undertakes the Forensic examination/analysis of Chemical such as Alcohol, Acid & Alkali & other petroleum products and Narcotic substances such as Opium, Morphine, Heroin, Cocaine, Lysergide (LSD), Cannabis products-Charas, Ganja & Bhang etc.

## EXPLOSIVE DIVISION

This division involves the examination and opinion on explosives (Civil, Military and IEDs) and explosive devices used in crime, riots, police firing, encounters etc. This division also helps the investigating agencies in the re-construction of scene of crime/ explosion etc.



*Gas Chromatography-Mass Spectrometer System (GC-MS)*



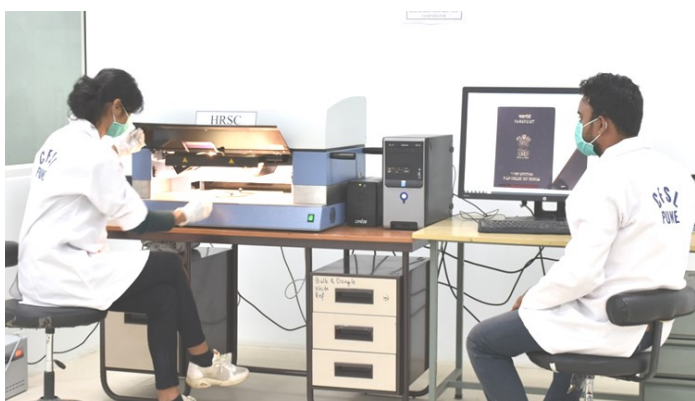
*Demonstration of Explosive examination by wet method*

## DOCUMENTS DIVISION

This division undertakes analysis of documents such as altered Questioned Documents, Dry Seal impressions, Paper Cuts, Tear Perforations, Rubber Stamps, Passports for Handwriting examination or any forgery related to the document for authentication and establishment of counterfeiting,

## PHYSICS DIVISION

This division undertakes the Forensic examination/analysis of Electrical Cables & Wires, Paint Chips & Flakes, Glass Pieces & Fragments, Tool Marks Identification, Paper & Currency, restoration of number/impressions, soil, foot prints – shoe prints, Tyre prints.



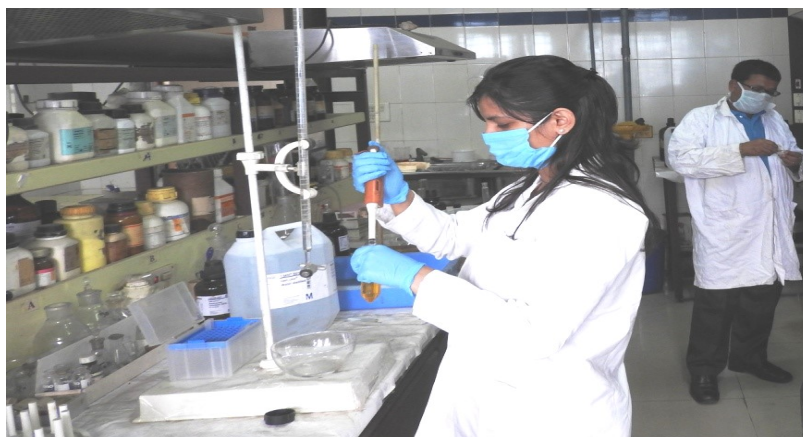
***Document examination on High Resolution Spectral Comparator system***



***SEM-EDXA system (Scanning Electron Microscopy (SEM) with Energy Dispersive X-Ray Analysis)***

## TOXICOLOGY DIVISION

This Division undertakes the forensic examination/analysis of Toxic Substances such as detection of poison from visceral material (Stomach & intestine with contents, Liver, Spleen, Kidney, Lungs, Brain, Heart), Detection of Methyl Alcohol and Ethyl Alcohol from Blood & Urine & Detection of Metallic Poisons/drugs as such or associated with various Matrices, etc.



***ANALYSIS OF VISCERA SAMPLE***



## NEW DIVISIONS

### Digital Forensic (Forensic Electronics)

This division will undertake the Forensic Analysis of Cyber Crimes, Computer Crimes, Mobile Phone Forensics, GPS Forensics, Internet Forensics, Malware Forensics, Hardware Forensics, Audio-Video Authentications, speaker identification, face recognition, CCTV footage analysis and Image Processing.



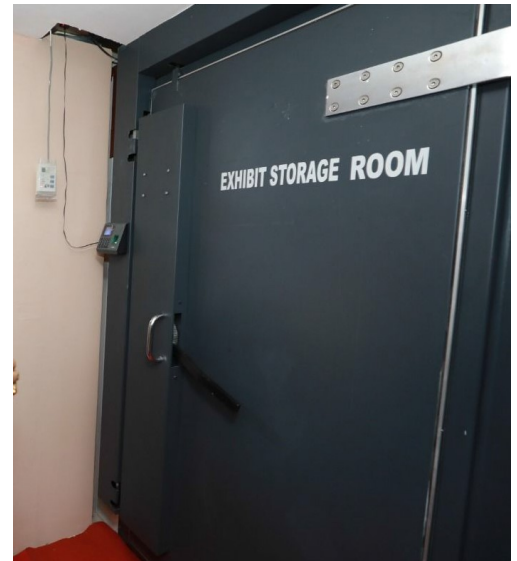
**Digital Speaker Identification System**



**ENCASE SYSTEM (Data recovery from the seized Digital evidence)**



**Forensic Server and Highly secure Exhibit storage facility at NCFL (E) Hyderabad**



### Forensic Engineering Division

This division will undertake the examination of large insurance frauds, industrial fires and arsons, examination of spurious building materials, examination of man-made and natural road/rail accidents, plane crash, boat crash etc.

### Forensic Intelligence Division

This division will undertake all types of preventive or proactive forensic works, all types of work related to creation of forensic database in the field of ink, textile fiber, automotive paints and polymers, voice prints, firearms database, DNA profile database etc. for homeland security.



### Forensic DNA Division

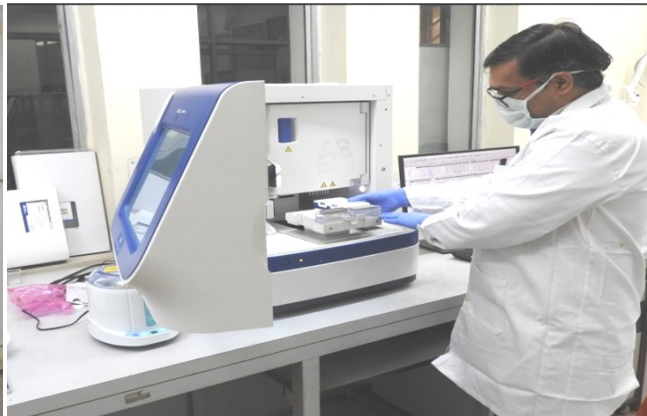
This division will undertake analysis of sexual assaults, rape cases, Mitochondrial DNA, paternity disputes, cases related to Disaster Victim Identification, Autosomal DNA analysis and identification of missing persons.



*Scientist working in the DNA Facility of CFSLs*



*PCR (Polymerase Chain Reaction) System*



*GENETIC ANALYSER 3500*

### Narcotics Drug Division

This division will undertake all types of cases related with Narcotic Drugs and Psychotropic Substances Act, 1985 (NDPS Act.).

### Forensic Psychology Division

This division will undertake all types of Psychological Investigations through Polygraph test, Brain Fingerprinting, invasive and non-invasive cognitive responses.



*Polygraph Pro Suite setup installed in forensic psychology division*

## **UNIQUE FACILITIES / EQUIPMENT**

In the last 5 years, major thrust was given in the up gradation of infrastructure across Central Forensic Science Laboratories. Highly sophisticated instruments were purchased in view of meeting current day challenges in the crime investigation processes and reporting cases in least possible time. List of major equipment in different domains of Forensic science as sanctioned by MHA is given herein;

S.No	Name of the equipment	Instrument Use
<b>Physical Sciences</b>		
1	Hardware Forensic Imaging Device	For retrieval of imaging the seized digital devices
2	Hardware Write Blocker Kit	For retrieval of data from seized digital devices
3	Software for forensic previewing image mounting password cracking and Forensic analysis of Digital Media	For retrieval of data from seized digital devices
4	Forensic tool kit for incident response of Digital crimes	For retrieval of data from seized digital devices
5	Forensic Triage tool Kit	For retrieval of data from seized digital devices
6	Password cracking tool for decrypting the passwords of password protected files, FVE and BIT Locker Volumes	For retrieval of data from seized digital devices, password cracker.
7	Software for the forensic previewing, imaging and analysis of Digital Media and Smart Phones	For retrieval of data from seized digital devices
8	Digital Forensic toolkit for the analysis of the various internet Artifacts Browsers	For retrieval of data from seized digital devices
9	Forensic software for the analysis of Mac Systems	For retrieval of data from seized digital devices
10	Software based tool kit for logical level analysis of GSM/CDMA/mobile phones	For retrieval of data from seized digital devices
11	Hardware tool kit for the Physical/logical level analysis of GSM/CDMA mobile phones and SIM cards	For retrieval of data from seized digital devices
12	Mobile phones forensic analysis tool kit for the physical logical analysis of Chinese mobile phone	For retrieval of data from seized digital devices
13	Digital forensic tool kit for the physical imaging and analysis of SIM card memory	For imaging and retrieval of data from seized digital devices
14	Portable imaging device for incident response	For retrieval of data from seized digital devices
15	CCTV Footage Acquisition analysis	For retrieval of digital video data from seized digital devices
16	High Resolution Spectral Comparator System (HRSC)	For detection of forgery in the documents
17	Comparison Microscope	For comparison of bullets

18	Magnet Axiom Complete	To recover, analyze, and report on data from mobile, computer, and cloud sources. Features like Timeline analyze data across all evidentiary sources.
19	Software Solution for mobile forensic and photo recogniser	For photo identification in the retrieved data from seized mobile
20	Voice/Multi Speech examination software	For audio examination
21	Mobile Forensic tool	For Data retrieval from mobile
22	Software/tools for examination and analysis of Digital Video Recording (DVR) from various surveillance systems	For analysis of digital videos seized during case investigation
23	Mobiledit (Forensic Express Pro) tool	It is an all-in-one solution for data extraction from phones, smart watches and clouds. It utilizes both physical and logical data acquisition, has excellent application analysis, deleted data recovery, a wide range of supported devices, fine-tuned reports, concurrent processing, and easy-to-use interface. With a brand new approach, MOBILedit Forensic is much stronger in security bypassing than ever before.
24	Refractometer	It is a simple instrument used for measuring concentrations of aqueous solutions such as gases, liquids, and translucent solids
25	Advance Digital Microscope	They supply powerful images from a number of angles and sizes. These images can be used by people when they are publishing research papers because the clarity of images allows them to be printed and often look good while making presentations
26	Compound Microscope	It is used for viewing samples at high magnification (40 - 1000x), which is achieved by the combined effect of two sets of lenses: the ocular lens (in the eyepiece) and the objective lenses
27	Precious Metal Purity Analyzer-Bench Top Portable XRF	It is an easy-to-use, cost-effective method to obtain alloy chemistry and karat classification with one non-destructive and non-intrusive test. And, in an economic environment where fast and accurate results are more important than ever

Chemical sciences		
01	High Performance Liquid Chromatography System (HPLC)	For identification of polar compounds
02	Gas Chromatography Mass Spectrometry System	For identification of organic volatile compounds
03	Gas Chromatography System	For Low molecular weight compounds
04	Ultraviolet-Visible Spectrophotometer (UV-VIS)	For comparison and identification of derivatised compound on the basis of UV absorbance.
05	Fourier Transform InfraRed (FTIR)	For identification of functional groups and bonds in compounds

<b>Biological Sciences</b>		
01	Thermo Cyclers/PCR	For DNA Amplification
02	Automated DNA Extraction System	For purification of DNA
03	Genetic Analyzer	For identification and individualization of DNA
04	Human Identification DNA Kit-Autosomal STR	For identification of human DNA on the basis of STR markers.
05	Non-Refrigerated Centrifuge	high-capacity, general-purpose centrifuge for cell harvesting; a high-speed centrifuge for separating cell lysates; and a micro centrifuge for DNA precipitations
06	Global Filer PCR amplification STR Kit	It is the first 6-dye, 24-locus STR kit that combines maximum compatibility with global databasing loci standards. With dramatically reduced amplification time and superior discrimination power, it helps enable forensic DNA labs worldwide.
07	High Throughput DNA Sequencer (Next Generation Sequencer)	For advanced DNA sequencing
08	Sexual Assault Evidence Collection Kit (IO) (SAECK)	For Crime Scene use and collection of evidence
09	EZI DNA Investigator Kit	For molecular biology applications in forensic, human identity, and paternity testing.
10	Y Chromosomal STR Kit	To characterise paternal lineages of unknown male trace donors, especially suitable when males and females have contributed to the same trace, such as in sexual assault cases
11	UV HEPA Workstation	Filtered and sterilised air treated by the UV/HEPA system flows into the PCR chamber. Control potential PCR contamination with built-in UV to inactivate DNA between experiments. Shortwave UV can be used as a standard laboratory practice to reduce surface and airborne contaminants in the chamber.
12	Tissue Lyser	It provides effective disruption of human, animal, and plant tissues, bacteria, and yeast, allowing reproducible yields of DNA, RNA, and protein in subsequent purification procedures
13	Gel Documentation System	To record and measure labeled nucleic acid and protein in various types of media such as agarose, acrylamide or cellulose. Systems come in a variety of configurations depending on throughput and sample type.
14	High Quality Water Purification System	It is indispensable for laboratory which demand high quality water with increasing flexibility in research atmosphere.
15	Mixer Mill/freeze mill	Mixer mills are available to homogenize, grind and mix fibrous, hard and brittle material with a feed size up to 8 mm

## **CASE STATISTICS**

All the central forensic science laboratories examined cases of comparatively high complex nature that require expert professional opinion and enhanced standards of diligence.

Case Details	Year 2018-2022
Total cases Reported	<b>35,574</b>
No of Exhibits Examined	<b>13,48,026</b>

## **COURT EVIDENCE**

The experts/scientists of the CFSLS tendered numerous Court evidences in various Courts of Law during the period between 2018-2022 is indicated below:

Court Evidence in 2018-2022	<b>2814</b>
-----------------------------	-------------

## **SCENE OF CRIME**

During the period 2018-2022 nearly 100 Scene of Crime (SOC) attended by the CFSLS experts, year wise details are as follows:

SOC Attended in 2018-2022	<b>139</b>
---------------------------	------------

## **RESEARCH & DEVELOPMENT**

In last 5 years from 2018-2022 more than 150 research papers published in national and international journals on different areas of forensic science by scientists in CFSLS, details are tabulated below:

Research paper Published in 2018-2022	<b>175</b>
---------------------------------------	------------



## **CAPACITY BUILDING**

CFSLs under DFSS has organized various training programs for the benefit of Scientists, Police, Judges etc. during the period from 2018-2021.

In the financial year 2018-19 Scientists/experts from different CFSLs delivered in total 320 lectures to various universities, Training Institutes, Police Academies, Training schools and State Forensic Laboratories.

CFSL Hyderabad organized three training programs on **computer Forensics** to:

- i) Six experts from **BIMSTEC** countries,
- ii) Cyber-Forensic analysts of Forensic Science Laboratory, Tripura.
- iii) Forensic Science Laboratory, Bihar

Scientists from CFSL Kamrup (Guwahati), delivered lectures and imparted training on **“Preservation of Crime/Incident Scenes and Recording by Still Photography and Videography”** to eight photographers of Border Security Force (BSF) at their Office of Guwahati Frontier on August 02, 2018.



*Training of 08 photographers of Border Security Force at their office by officers of CFSL, Assam*





*Visit of judicial Officers of Judicial Academy, Chandigarh at CFSI, Chandigarh*

CFSL Chandigarh has organized a visit of judicial officers of Judicial Academy Chandigarh to CFSL, Chandigarh

In last 4 years from 2018-2022 more than 500 lectures were delivered by the senior experts of CFSLs at various Universities, Training Institutes, Police Academies, Training schools and State Forensic Science Laboratories. Scientists of the Central Forensic Science Laboratories have attended more than 150 offline/online training programs organized by various law enforcement and other agencies such as the NABL, LNIN NICFS, NFSU, Currency Note Press Nasik, ISTM, NCRB and Instrumental training for upgrading their technological knowledge and skills.

#### **LECTURE DELIVERED AND TRAINING RECEIVED 2018-2022**

Total no of Lectures Delivered by officers	<b>796</b>
Total no of Training Received by officers	<b>202</b>

To expedite the working of CFSLs, several Forensic Professionals (on contract basis) have already been engaged through FACT and FACT Plus examination organized by National Forensic Science University (NFSU), Gandhinagar campus.

## **E – ACTIVITY**

The duration of year from 2018-2022 was full of challenges and it was experienced by all of us that the impact of COVID-19 virus had shattered us down to our basics in between as well. The government of India had taken stringent and responsible actions for the benefit of the people of nation and imposed scheduled lockdowns with restrictions to curb the spread of this virus. Under these circumstances, the staff of CFSL had followed all the guidelines that were issued in the interest of public health and protection. Only limited staff was called to carry out basic activities of the CFSL and the rest were asked to work from Home.

In that perspective, our officers had indulged themselves to identify the use of E-platform to carry out the dire work and enrichment with knowledge. The following is the list of e-work done by the officers and staff of CFSLs.

<b>S. No.</b>	<b>Name of E-Activity</b>	<b>No. of Officers/Staff</b>	<b>E-Activity Done</b>
1.	No. of Webinars	20	90
2.	E-Training/Seminars/Webinars	15	80
3.	E-Court Attendance	22	45
4.	E- Lecture Delivered	18	55
5.	E- Lecture Attended	15	60
6.	E-Meetings	50	32

The use of e-platform for communication and mutual interaction had given an edge and add up the reach of people among themselves. Now, it is considered an essential platform for the communication among the officers. The Hon'ble courts are entrusting the e-platform as an essential tool for the future courts towards attendance of forensic experts in disposing forensic evidence.

## **CASES OF NATIONAL IMPORTANCE/HIGH PROFILE CASES**

- **Tripura Matriculation Examination Scandal case**

The Superintendent of Police, Itanagar, Tripura submitted a case in connection with the Matriculation Examination Scandal to authenticate genuineness of all together 291 Answer Sheet Booklets of different Subjects and if there is any insertion of pages in the Answer Sheet Booklets. Scientist compiled all the information and submitted report accordingly.

- **NIA Terror funding Case**

In a terror funding case, Police and CRPF intercepted a CAR with four Govt. employees possessing Rs. 15,00,000/- in cash. The said amount was alleged to be handed over to NSCN/IM cadres. During the investigation by NIA, one desktop computer containing a 1 TB Hard Disk Drive (HDD) and six reference documents were forwarded to CFSL, Kamrup for extraction. Scientist acquired and analysed all the data and submitted report accordingly.

- **Royal Bhutan Police HQ toxic substance testing case**

A case received from Royal Bhutan Police HQ, where a person suspected to be died due to ingestion of some powdery material as stated by his family member. The sample under test was detected with traces of extremely toxic systemic carbamate insecticide. Thus, the case was reported successfully.

- **Damaged Smartphone data retrieval case**

A case involving the examination and retrieval of data from a smartphone broken into 5 pieces was received at CFSL Chandigarh. Efforts have been made to retrieve the data from this phone. This data was successfully retrieved by using chip off technology and replacing the IC board of the phone with another phone.

- **Complicated case of Toxicology Division**

A case of north-eastern region where four family members were found dead, thus, their biological samples and left over food have been sent to this laboratory. The samples were extracted by employing various sample preparation procedures as per working procedure manual; yet, the visceral samples were not detected with any kind of generally used pesticides, drugs, phosphides, alcohol and/or metal. After several efforts and as per research literatures, the samples were tried to analysed and as a result, samples were detected with presence of an unusual grass originated poisonous compound. Thus, the case was reported successfully.

- **Indian & foreign Counterfeit Currency Examination case**

Rampant cases related to circulation of fake currency notes have been reported in India and CFSL Hyderabad and other CFSLs has received various Cases from reputed Indian law enforcement agencies for examination of these cases. In last four years we have received various cases related to Counterfeit 2000/- Rs and 500/- Rs Indian Banknote and Foreign Currency Notes like Euro and Dollars. The scientist compared the security features of exhibits with sample original currency and submitted the report accordingly.

- **Nano Material products Examination case**

Physics division of CFSL Hyderabad have received various Exhibits like Bio Nano cards, Bracelets and water purifying bottles etc. from Honorable Judicial Magistrate Kerala. These product where disputed due to their claim of effecting organic function of human body under section *The Drugs and Magic Remedies* (Objectionable Advertisement) Act, 1954. The scientist examined the material and measured all of the relevant information and submitted the report accordingly.

- **Refugees fraudulently obtaining Indian Nationality Case: Face matching using Norma frontalis position of the person in the photographs**

Received various Cases from SIT Hyderabad related to face matching of from Photographs available in Forged ID Cards like Aadhar cards and Voter ID cards with UNHCR cards given by UN Refugee Agency. This case was to track illegal activities and fraud by convicted persons and groups under section 420, 468, 471, IPC; Sec.14(b), 14 (c) Foreigner's Act. 1946; Sec. 12(1A) (a) of Passport Act. 1967. In accordance with the morphological features of the particular person, the scientist reviewed passport-size photographs and collected all the information and unique features about the person.

- **Examination of National Flag burning case**

Physics division of CFSL Hyderabad Received cases from Shillong, Meghalaya India, regarding burning of flag and motor vehicle to promoting enmity between different groups and doing acts prejudicial to maintenance of harmony. The scientist compiled all of the information as per the questionnaire received from the investigation officer regarding burned material, glasses etc. and submitted the report.

**MANPOWER**

<b>Technical Manpower (2018-2022)</b>			
<b>Designation</b>	<b>Sanctioned</b>	<b>Actual</b>	<b>Vacancy</b>
Group A Officer	136	99	37
Group B Gazetted Officer	49	31	18
Group B Non-Gazetted Officer	38	20	18
Group C	22	10	12
Grand Total	245	160	85
<b>Non -Technical Manpower (2018-2022)</b>			
<b>Designation</b>	<b>Sanctioned</b>	<b>Actual</b>	<b>Vacancy</b>
Group A Officer	01	01	Nil
Group B Gazetted Officer	09	07	02
Group B Non-Gazetted Officer	55	35	20
Group C	164	103	61
Grand Total	229	146	83

**STATUS OF PLACEMENTS & ATTRITIONS (2018-2022)**

<b>Designation</b>	<b>Promotion</b>	<b>Direct Recruitment</b>	<b>Resignation</b>	<b>Removal</b>
Group A Officer	35	Nil	3	Nil
Group B Gazetted Officer	5	17	6	1
Group B Non-Gazetted Officer	7	17	4	Nil
Group C	6	15	8	Nil
Grand Total	53	49	21	1

**MODIFIED ASSURED CAREER PROGRESSION SCHEME (MACPS) (2018-2022)**

<b>Designation</b>	<b>2018-19</b>	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>
Group A Officer	Nil	Nil	Nil	1
Group B Gazetted Officer	Nil	Nil	1	Nil
Group B Non-Gazetted Officer	7	7	14	7
Group C	1	Nil	Nil	Nil
Grand Total	8	7	15	8

## **RECRUITMENT RULES**

### **NOTIFIED RECRUITMENT RULES OF DFSS – LAST 3 YEARS**

<b>Sl. No.</b>	<b>Subject</b>	<b>E-notification Date</b>
1.	Amendment of RRs for the post of Lower Division Clerk (LDC)	11/04/2019
2.	Amendment of RRs for the post of Upper Division Clerk (UDC)	16/07/2019
3.	Amendment of RRs for the post of Despatch Rider	12/07/2019
4.	Amendment of RRs for the post of Laboratory Assistant (LA)	01/08/2019
5.	Amendment of RRs for the post of Multi-Tasking Staff (MTS)	02/08/2019
6.	Amendment of RRs for the post of Senior Scientific Assistant (SSA)	06/01/2020
7.	Amendment of RRs for the post of Private Secretary (PS)	17/01/2020
8.	Amendment of RRs for the post of Stenographer Gr. II	20/01/2020
9.	Amendment of RRs for the post of Administrative Officer (AO)	24/02/2020
10.	Amendment of RRs for the post of Staff Car Driver	02/03/2020
11.	Amendment of RRs for the post of Director-cum-CFS	08/07/2020
12.	Amendment of RRs for the post of Laboratory Attendant	02/10/2021
13.	Amendment of RRs for the post of Assistant	16/10/2021
14.	Amendment of RRs for the post of Senior Accountant	16/10/2021
15.	Amendment of RRs for the post of Assistant Director (Admn.)	16/10/2021
16.	Amendment of RRs for the post of Deputy Director (FS)	16/10/2021
17.	Amendment of RRs for the post of Junior Accountant	16/10/2021
18.	Amendment of RRs for the post of Junior Scientific Officer (JSO)	30/10/2021
19.	Amendment of RRs for the post of ACIO-I (Document)	13/11/2021
20.	Amendment of RRs for the post of Stenographer Gr. I	19/01/2022
21.	Amendment of RRs for the post of Group 'A' Scientific Posts	22/03/2022

### **UNDER CONSIDERATION RECRUITMENT RULES OF DFSS**

<b>Sl. No.</b>	<b>Subject</b>
1.	Amendment of RRs for the post of Senior Scientific Officer (FS)
2.	Amendment of RRs for the post of ACIO-I (Photographer)
3.	Senior Translator
4.	Deputy Director (Quality Assurance & Quality Control)
5.	Assistant Photographer Group 'C'
6.	Photographer Group 'C'



**BUDGET & EXPENDITURE**

Amount in crore

Year	Scheme	Revenue		Capital	
		Allotted	Expenditure	Allotted	Expenditure
2018-19	DFSS	2.36	1.88851	0	0
	CFSL	39.69	35.7038	32.85	26.4637
	Nirbhaya Fund	0.92	0.8864	25.64	8.3870
2019-20	DFSS	2.54	1.9387	0	0
	CFSL	41.93	38.4142	38.79	32.5312
	Nirbhaya Fund	9.75	6.6282	13.23	8.1343
2020-21	DFSS	2.27	1.9396	0	0
	CFSL	38.18	38.6022	12.79	13.4487
	Nirbhaya Fund	5.35	5.5103	6.00	3.6450
2021-22	DFSS	6.04	2.7363	0.03	0
	CFSL	52.23	42.2792	13.12	11.0281
	Nirbhaya Fund	6.7129	3.5759	6.00	2.1395

## **COMPLETED PROJECTs**

### ***a. Establishment and modernization of CFSLs:***

As part of a project under the umbrella scheme for modernization of Police Forces, Government has approved a Scheme for DFSS viz. **'Establishment of New Central Forensic Science Laboratories and Modernization of Existing CFSLs under the Directorate of Forensic Science Services'** with an outlay of **₹ 323.12 crore**. The principle objective of this scheme is to strengthen CFSLs to facilitate an efficient forensic science support to the law enforcement agencies, and to modernize CFSLs to handle hi-tech and emerging crimes. The project involves:

- i) Construction of new CFSL buildings at Bhopal, Guwahati, Pune and Kolkata
- ii) Setting up of six new Divisions in all the six CFSLs for Digital forensics (Forensic Electronics), Narcotics Drugs testing, DNA analysis, Forensic engineering, Forensic intelligence, and Forensic psychology, with suitable machinery & equipment and manpower.

### **INFRASTRUCTURAL PROJECT COMPLETED**



#### **CFSL Kamrup (Guwahati)**

- ◇ Total area of complex – 10 acres.
  - ◇ Built-up area – 13323 sq. Meter.
  - ◇ Layout – Ground + 4
  - ◇ Financial Outlay: 50.07 Cr.
  - ◇ Energy efficient and Eco-friendly.
  - ◇ Capacity to dispose 2000 cases / annum
  - ◇ **Zonal Forensic Training Academy setup with NFSU.**
  - ◇ **Centre of excellence for Forensic Biological Sciences.**
  - ◇ CFSL Guwahati developed as repository of Certified Reference Materials for Drugs of Abuse.
- The laboratory inaugurated by the Hon'ble Union Home Minister on March 6, 2019.**

#### **CFSL Bhopal**

- ◇ Total area of complex – 20 acres.
- ◇ Built-up area – 13833 sq. Meter.
- ◇ Layout – Ground + 4
- ◇ Financial Outlay – 53.72 Cr.
- ◇ Energy efficient and Eco-friendly.
- ◇ Capacity to dispose 2000 cases / annum
- ◇ **Zonal Forensic Training Academy setup with NFSU.**
- ◇ **Center of excellence for Forensic Physical Sciences.**
- ◇ CFSL Bhopal developed as repository of forensic indices for forensic Intelligence.

**The laboratory inaugurated by the Hon'ble Union Home Minister on March 6, 2019.**





### CFSL Pune

- ◇ Total area of complex – 30 Acres
  - ◇ Built-up area – 13462 Sq. Mts.
  - ◇ Layout : Four Blocks (A-D); Gr. +1
  - ◇ Financial Outlay: 62.45 Cr.
  - ◇ Energy efficient and Eco-friendly.
  - ◇ Capacity to dispose 2000 cases / annum
  - ◇ **Zonal Forensic Training Academy setup with NFSU.**
  - ◇ **Centre of excellence for Forensic Psychology .**
  - ◇ CFSL Pune developed as repository of forensic indices for Poisonous substances .
- The laboratory was inaugurated on 19.12.2021 by Hon'ble Union Home Minister.**

### CFSL Kolkata

- ◇ Total area: 12364 Sq Mts
- ◇ Built-up Area: 10509 Sq Mtr
- ◇ Layout – : Three Blocks (A-C) Gr. +3
- ◇ Financial Outlay: 87.82 Crore.
- ◇ Energy efficient and Eco-friendly.
- ◇ Analysis Capacity to dispose 2000 cases / annum
- ◇ **Centre of excellence for Forensic Explosives.**
- ◇ CFSL Kolkata will be developed as repository of forensic indices for Explosive substances.

Yet to be Inaugurated



## ***b. Modernization of State Forensic Science Laboratories***

As per charter of duties of DFSS, it is continuously providing technical support to State Forensic Sciences Laboratories (SFSLs) in establishment/strengthening of various new and existing Divisions, accreditation, providing Standard Operating Procedures (SoPs), technology transfer, etc. DFSS has evaluated and recommended proposals submitted by SFSLs under 'Nirbhaya Fund' for establishment/strengthening of Cyber and DNA Divisions. Accordingly, MHA has approved projects to the tune of **₹203 crores** to 23 States/UTs under Nirbhaya Fund Scheme. DFSS is closely coordinating the physical and financial progress of these projects with the States/UTs and collating information and their further requirements.

### c. State of Art DNA Laboratory at CFSL Chandigarh

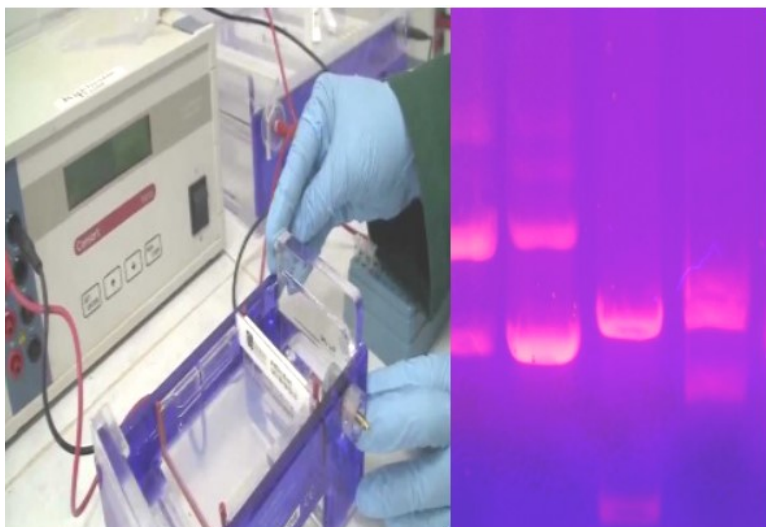
Under Nirbhaya Fund, a project viz. Setting up of State-of-art- DNA laboratory at CFSL Chandigarh was approved by MHA, Govt. of India vide its OM No. 25013/06/2018 dated April 24, 2018 with a **financial outlay of Rs. 99.76 Crore**. The laboratory has been inaugurated **by Sh. Nityanad Rai Ji, Hon'ble MoS(H) on December 23, 2019** at Chandigarh and started functioning. Under this scheme four Units have been established viz. :

- ⇒ Sexual Assault and Homicide Unit
- ⇒ Human Disaster Victim Identification Unit
- ⇒ Paternity Unit and
- ⇒ Mitochondrial DNA Unit

This new Centre is fully equipped with latest Forensic DNA tools and equipment. Quality Manual, Working Procedure Manuals for Biology and DNA Divisions and A mobile App-“Crime Scene Management” has also been released for the stake holders. This facility will act as an Advanced DNA Centre for Training, human resource development and R&D. This laboratory will act as Model Laboratory for the Central and State FSLs of the country.

#### Types of CASES Handled:

- ◆ Disputed paternity/maternity,
- ◆ Criminal paternity,
- ◆ Rape and Murder cases,
- ◆ Child abuse and
- ◆ sexual assault cases (POCSO),
- ◆ Human identification cases,
- ◆ Challenging DNA cases: charred bone ,  
exhumed skeletal remains, touch DNA,  
trace elements, Homicide cases, Kinship  
analysis.



*Horizontal Gel Electrophoresis apparatus (left) for Quantification of DNA and Agarose Gel Electrophoresis results (right) under UV illumination with fluorescent bands of DNA*

#### Deliverables:

- Acting as a model Lab for DNA Profiling and also facilitate other states for the speedy disposal of DNA cases.
- Target of 2000 cases per Annum.
- Work as referral Centre for case examination and also acting as a R&D Centre in the field of DNA/ Biological Sciences.



#### ***d. Establishment of National Cyber Forensic Laboratory - NCFL (E), Hyderabad***

Under CCPWC Scheme of MHA a “National Cyber Forensic Laboratory for Evidentiary purposes” has been established at CFSL Hyderabad. The **financial outlay** of this scheme is **Rs. 37.34 Crore**. The Laboratory has been **Inaugurated on May 14, 2022 by the Hon’ble Union Minister of Home and Cooperation Shri Amit Shah**.



***Inauguration of NCFL (E) at Hyderabad***

Following specialized sub units have been set up in NCFL, Hyderabad :-

- ⇒Digital Storage Media Examination Unit
- ⇒Mobile Phone and Embedded System Examination Unit
- ⇒Advanced Digital Forensic Unit
- ⇒Scene of Crime Unit

The main target of this laboratory is to examine highly critical electronic evidences referred by Central and State law enforcement agencies. The accessibility of facilities under NCFL(E) to be made available to all the Forensic Science Laboratories of both State & Central/ various Law Enforcement Agencies at State & Central level/ UTs on completion of the laboratory. It is also planned to establish such wings to other CFSLS /State FSLs in future. NCFL (E), Hyderabad in future will act as Model Laboratory for Cyber Forensics.



***Highly secure Exhibit storage room at NCFL***

#### **Deliverables:**

- Work as referral Centre for case examination and also acting as a R&D Centre in the field of Digital forensic/Forensic Electronics.
- Target of 1000 cases per Annum

## **MAJOR ACHIEVEMENTS**

### **a. Construction of New CFSLs buildings**

Construction of three new state of art CFSL Complexes in Pune, Bhopal & Guwahati (Assam) completed, shifted and inaugurated. The construction work in the modern Laboratory building complex in CFSL, Kolkata is close to completion.

### **b. Establishment of new Divisions in six CFSLs:**

- ⇒ DNA Profiling
- ⇒ Forensic Electronics (Cyber Forensics, Computer, Audio-Video Authentication, speaker identification and Mobile Forensics)
- ⇒ Narcotics, Forensic Psychology , Forensic Engineering & Forensic Intelligence

### **c. Establishment and inauguration of two new advanced facilities**

- ⇒ State of Art DNA Laboratory at CFSL Chandigarh
- ⇒ National Cyber Forensic Laboratory - NCFL (E), at CFSL Hyderabad

### **d. Guidelines Preparation**

CFSL Chandigarh under DFSS, MHA has prepared guidelines for collection, preservation and transportation of forensic evidence in sexual assault cases for Investigation Officers and Medical Officers.

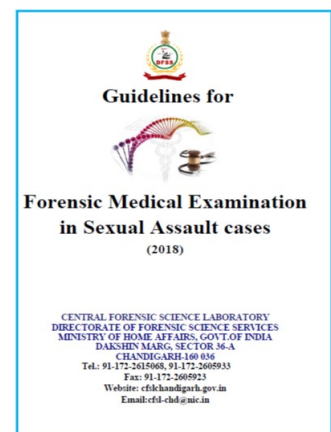
(Important Links: [http://www.cfslchandigarh.gov.in/\(S\(24d5vtpojtbwzlsru2gjo1xg\)\)/Uploads/Media/Original/20180627121024\\_I O-SOP%20Final.pdf](http://www.cfslchandigarh.gov.in/(S(24d5vtpojtbwzlsru2gjo1xg))/Uploads/Media/Original/20180627121024_I O-SOP%20Final.pdf))

### **e. Sexual Assault Evidence Collection Kit (SAEC Kit)**

DFSS prepared and finalized the specifications for Sexual Assault Evidence Collection Kit (SAEC Kit) and the SAEC kits are now available on Government e-Market place (GeM). A total of 3,120 SAEC kits were distributed by MHA to all States/UTs for orientation under the Nirbhaya Fund. Procurement of SAEC kits for distribution to States/UTs has been commenced.

### **f. Implementation of ICJS (Interoperable Criminal Justice System) – e-forensics in seven CFSLs.**

It is an initiative of the e-Committee to facilitate data and information exchange between courts, police, jails, and forensic science laboratories. It has mainly three features: Automates the complete work flow of forensics labs from registration to dispatch of reports; Data and report sharing with other pillars like police and courts; Provides statistical and status information about registration, report readiness and dispatch of reports.



## g. Quality Manual

Quality Manual as per new guidelines of ISO-IEC 17025: 2017 (E) for accreditation of FSLs of the country. (This is comprehensive document, which can be used as a main quality system document for accreditation of new lab by NABL or QCI and for updating their existing accredited status and for documentation of the laboratory).

## h. Standard Operating procedure (SOP) for Crime Scene Investigation

Standard Operating procedure (SOP) for Crime Scene Investigation and developed an Android Application named “Crime Scene Management”.

## i. Standard list of equipment for establishing / upgrading of Forensic Science Laboratories

DFSS prepared and finalized the specifications Procedure for calibration of Test and Measuring equipment used in Forensic Science Laboratories.

## j. Android Apps

DFSS has developed two Android Application for easy understanding and learning of “Digital Forensic Investigation” and “Crime Scene management” (for collection of DNA evidence and their transportation to the laboratory) for Investigating Officers of the country. This app contains the guidelines in Hindi & English for Investigating Officers.

## k. Working Procedure Manuals publication

Up-dation and preparation of Working Procedure Manuals (WPMs) in 08 disciplines ((Speaker Identification, Computer Forensics , Biology, DNA, Chemistry, Explosive, Narcotics and Toxicology etc.) of Forensic Science to have uniformity in examination and reports.

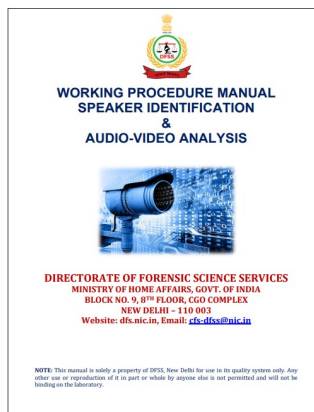
## 1. Procedure for calibration of Test and Measuring equipment used in Forensic Science Laboratories.

The sole aim of this manual is to provide documented, verified and validated procedures for calibration of general and sophisticated equipment routinely used in forensic science laboratories. An attempt has also been made device various logs which will help in maintenance of calibration, calibration plan and verification of calibration.

DIRECTORATE OF FORENSIC SCIENCE SERVICES  
FORENSIC SCIENCE LABORATORIES  
QUALITY MANUAL  
(IN ACCORDANCE WITH ISO 17025:2017)



DIRECTORATE OF FORENSIC SCIENCE SERVICES  
MINISTRY OF HOME AFFAIRS, GOVT. OF INDIA  
BLOCK NO. 9, 8th FLOOR, CGO COMPLEX  
NEW DELHI - 110 003  
Website: dffs.nic.in, Email: cfs-dffs@nic.in



## m.Extra Mural Research (EMR) Scheme

Awarded 11 Extra Mural Research (EMR) Projects to different IITs and S&T Institutions for carrying out research in the grey areas of Forensic Science.

### List of Projects under EMR Scheme

S.No	Title of the project and Name of project executing Institution	Discipline
1	A deep learning and machine learning based package for detecting forgeries in images, video and audio IIT Mandi	Digital Sciences
2	CCTV Storage Media Recovery and Enhancement Software: AI-powered Cloud-capable Blockchain-based Digital Forensics Chain of Custody IIT Patna	Digital Sciences
3	Cyber Forensic Triage Tool for Windows Offline Forensic Analysis CDAC, Thiruvananthapuram	Digital Sciences
4	Automatic approach for Real-Time Facial recognition using Deep Neural Network (RTFR-DNN) Indra Gandhi Delhi technical University , For Women (IGDTUW), Delhi	Digital Sciences
5	Development of Software for Authentication of Audio-Video Footage IIT Roorkee	Digital Sciences
6	Development of Authorship Attribution Methods for Forensics Applications CDAC, Noida	Digital Sciences
7	Precise estimation of time since death from post mortem changes in housekeeping genes in human heart, Lung and Liver Tissues PGIMER Chandigarh	Biological Sciences
8	DNA Phenotyping as the new Sketch Artist: Predicting Facial Features from DNA for Forensic Case Identification PGIMER Chandigarh	Biological Sciences
9	Gene Databank for Forensic Investigation in India NIT Puducherry	Biological Sciences
10	AI-enabled low-cost handheld device for writer verification and offline signature verification UIET, Panjab University, Chandigarh	Physical Sciences
11	Development of effective scientific methods for identification of trace evidence (cosmetic trace, condom traces and sexual lubricants) in crimes against women Institute of Forensic Science, Panjab University, Chandigarh	Chemical Sciences



## n. Signed MoUs with Indian Government Universities:

- ⇒ Signed MoU with NFSU for research & Development in the field of Forensic Psychology. (Work started on 19 research projects in collaboration with CFSUs and NFSU).
- ⇒ Signed MoU by CFSU Chandigarh and IGTUW, Govt. of NCT of Delhi to facilitate & promote studies, research, technology innovation, incubation and extension work in emerging areas of Forensic science.



## o. Notified 21 no's of Recruitment Rules of various posts.

## p. Induction of 155 Forensic Professionals in six Labs selected through FACT and FACT Plus exam.

## q. Major Equipment procured & Installed in six CFSUs:

- ⇒ **Chemical Sciences**- HPLC (6), GC, GC-MS (6), UV-VIS (6), FTIR (6)
- ⇒ **Biological Sciences**- Genetic Analyzer (6), RT-PCR(10), PCR (30), Auto DNA Extraction system (5), Next Generation Sequencer, Plate Centrifuge; Refrigerated Centrifuge, Bio Safety Cabinet, Digital Microscope, Digital Autoclave, Tissue analyzer, Gel Document System, Water Purification System.
- ⇒ **Physical Sciences**- HRSC(3), Comparison Microscope (5), Polygraph Pro Suite (6), Layered Voice Analysis (6) etc.
- ⇒ **Cyber Forensics**- Magnet Axiom, UFED 4PC (2), UFED Touch2 (06), Tableau TX1 forensic imager, FRED workstation (6), Mobile Edit etc.

A total of **136 number** of major equipment Purchased for various divisions of CFSUs under DFSS costing ₹ **68 crores** approx.

## r. Provided assistance to the State FSLs for procurement of Standard Reference Material in Narcotics.

## s. Recommended Nirbhaya Fund and Police Modernization Funds to State FSLs

DFSS provided technical support to 24 States for establishment/upgradation of DNA, Cyber and Narcotics Divisions.

## **INTERNATIONAL COOPERATION**

- Prepared and implemented :Perspective Plan for Seychelles, Vietnam & Maldives for Forensic augmentation.
- Conducted training programs for the Police Officers/Experts of Maldives, Vietnam, Nepal, Bhutan, etc. (incl. SAARC countries).
- Participation of CFSL Scientists in the 5th & 6th Expert Group Meeting of the Shanghai Cooperation Organization (SCO) in Kazakhstan and Kyrgyzstan in 2017 and 2018.
- Participation of CFSL Expert in the Interpol Project Watchmaker Working Group Meetings held in India and Sri Lanka in the year 2018.
- Participation of CFSL Scientists in the Interpol meeting on Digital Forensic at Brazil in May 2019.
- Presented status of Forensic Science in India in the SCO Meeting held on March 2019 and participated in Virtual meeting of SCO in the month of Oct. 2020 and Dec. 7-9, 2022.
- In the year 2022-23; Provided technical consultation on the Proposal/DPR received from the Gov. of Mauritius for the construction and establishment of new FSL, Mauritius, through MEA, Gov. of India.

## **LIST OF UNION HOME MINISTER AWARDEES OF CFSLS**

<b>S.No.</b>	<b>Name &amp; Designation</b>
1.	Dr. R.P. Bhatia Former, CFS, DFSS, HQs, New Delhi
2.	Dr. R.K. Tewari Former, CFS, DFSS, HQs, New Delhi
3.	Dr. M.S. Rao Former, CFS, DFSS, HQs, New Delhi
4.	Dr C N Bhattacharyya Former, CFS, DFSS, HQs, New Delhi
5.	Dr S K Jain Chief Forensic Scientist, DFSS, New Delhi
6.	Dr R S Verma Former Director, CFSL Chandigarh
7.	Dr V K Kashyap Former Director, DFSS Delhi
8.	Dr S R Singh Former Director, CFSL, Delhi
9.	Dr V K Mehrotra Former Director, CFSL Hyderabad
10.	Dr S K Shukla Former Director, CFSL, Chandigarh
11.	Dr R K Sarin Former Director, CFSL Hyderabad
12.	Sh. K M Varshney Former Director, CFSL, Hyderabad
13.	Sh. Amar Singh Former GEQD, Shimla Unit
14.	Sh R K Jain Former GEQD, Hyderabad

S.No.	Name & Designation
15.	Sh. S. Dey Former GEQD, Shimla Unit
16.	Sh. Santokh Singh Former GEQD, Shimla Unit
17.	Sh. C.H. Gandhi Former GEQD, Hyderabad
18.	Dr Smt. Asha Dhir Former Director, CFSL Chandigarh
19.	Sh M C Joshi Former Director, CFSL, Hyderabad
20.	Dr I Haque Former Director, CFSL Chandigarh
21.	Dr A K Sharma Director, CFSL, Assam
22.	Dr Rajiv Girotti Scientist 'E', CFSL Hyderabad
23.	Dr Sanjeev Former Dy. Director, CFSL Chandigarh
24.	Dr R M Tripathi Former Dy Director, CFSL, Chandigarh
25.	Sh. D.D. Goyal Former Dy Director, CFSL, Kolkatta
26.	Sh P K Sastry Former AGEQD, CFSL, Hyderabad
27.	Sh. M Krishna AD, CFSL Hyderabad
28.	Dr S S Murthy AD, CFSL Hyderabad
29.	Sh. B P Singh AD, CFSL Chandigarh
30.	Dr Vimukati Chauhan A.D, CFSL Chandigarh



# **Contacts**

## **Director**

Central Forensic Science Laboratory  
Amberpet Post, Ramanthapur  
Hyderabad - 500013, Telangana  
Phone: 040-27038429  
Email: [director.cfsl-hyd@gov.in](mailto:director.cfsl-hyd@gov.in)  
Web: <http://cfslhyd.gov.in>

## **Director**

Central Forensic Science Laboratory  
Urput Village, Urput-Kumeria Road  
P.O. Maniari Tiniali, P. S. Palashbari  
Dist. Kamrup, (Rural Assam) Assam-781125.  
Phone: 0361-2571149  
Email: [coord.cfsl-ghy@gov.in](mailto:coord.cfsl-ghy@gov.in)  
Web: <http://cfslghy.gov.in>

## **Director**

Central Forensic Science Laboratory  
Gat No.6, Nanoli Tarfe Chakan, Talegaon MIDC,  
Near JCB Factory, Taluka: Maval,  
Pune - 410 507, Maharashtra.  
Phone: 020-20261696  
Email: [cfslpune-dfss@gov.in](mailto:cfslpune-dfss@gov.in)  
Web: <https://cfslpune.gov.in/>

## **Director**

Central Forensic Science Laboratory  
Plot # 2, Sector 36-A, Dakshin Marg  
Chandigarh - 160036, India.  
Phone: 0172-2615068  
Email: [cfsl-chd@nic.in](mailto:cfsl-chd@nic.in)  
Web: <http://cfslchandigarh.gov.in>

## **Director**

Central Forensic Science Laboratory  
DJ-10/1, Action Area ID, New Town,  
Kolkata, West Bengal-700156  
Email: [dircfsl-kol@gov.in](mailto:dircfsl-kol@gov.in)  
Web: <http://cfslkol.in/>

## **Director**

Central Forensic Science Laboratory  
Block no.4, CGO Complex,  
Lodhi Road, New Delhi.  
Phone: 011-24261396  
Email: [dcfsl@cbi.gov.in](mailto:dcfsl@cbi.gov.in)

## **Director**

Central Forensic Science Laboratory  
Bhopal- 462030, Madhya Pradesh.  
Phone: 0755-2779657  
Email: [cfslbho-mp@gov.in](mailto:cfslbho-mp@gov.in)  
Web: <https://www.cfslbpl.gov.in>

## **Question Document**

Unit of CFSL Chandigarh  
Railway Board Building, AG Chowk,  
Opposite AG Post Office, The Mall, Shimla,  
Himachal Pradesh 171003  
Phone: 0177 281 1173



## **Director Cum Chief Forensic Scientist**

Directorate of Forensic Science Services  
Ministry of Home Affairs, Govt. of India

8th Floor, Block No. 9, CGO Complex,  
New Delhi-110003

Contact : 011-24365835, Fax :24362819,

Email: [cfs-dfss@gov.in](mailto:cfs-dfss@gov.in)/[ssofs-dfss@nic.in](mailto:ssofs-dfss@nic.in)

Website: <http://dfs.nic.in>