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THE DIGITAL EVIDENCE PARADIGM: ANALYSING THE IMPACT OF SECTION 63 BSA AND THE HASH VALUE MANDATE

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ABSTRACT

This paper examines the fundamental jurisprudential shift in the Indian criminal justice system from colonial-era statutes to a modern, science-centric framework established by the Bharatiya Nagarik Suraksha Sanhita, 2023 (BNSS), the Bharatiya Sakshya Adhiniyam, 2023 (BSA), and the Bharatiya Nyaya Sanhita, 2023 (BNS). It highlights the elevation of forensic science from a discretionary investigative aid to a mandatory procedural requirement, particularly under Section 176(3) of the BNSS, which compels forensic crime scene visitation for offences punishable by seven years or more. The study critically analyses the modernization of digital forensics, emphasizing the statutory integration of cryptographic hash values and dual-certification for electronic evidence under Section 63 of the BSA to ensure the integrity of digital documents. Furthermore, the paper traces the judicial evolution of forensic evidence, exploring how the Supreme Court balances the state's truth-seeking mandate with fundamental constitutional rights under Article 20(3) (self-incrimination) and Article 21 (right to privacy), specifically concerning biometric data and DNA profiling. Finally, while recent cases demonstrate the potential for rapid convictions, the paper underscores a critical gap between legislative intent and ground-level reality. It concludes that the ultimate success of these sweeping legal reforms hinges entirely on overcoming severe infrastructure deficits, manpower shortages, and massive case backlogs currently straining India's forensic laboratories.

Keywords: Forensic Jurisprudence, Bharatiya Nagarik Suraksha Sanhita (BNSS), Digital Evidence, Constitutional Rights, Forensic Infrastructure.

1.1 Introduction: The Jurisprudential Pivot to Science

The administration of criminal justice in India has historically oscillated between the primacy of ocular evidence and the emerging necessity of scientific corroboration. For over a century, the Indian legal system, underpinned by the colonial-era *Indian Evidence Act, 1872* (IEA) and the *Code of Criminal Procedure, 1973* (CrPC),

operated on a paradigm where the testimony of witnesses, often fallible, occasionally hostile, and frequently compromised, formed the bedrock of conviction. Forensic evidence, though recognised, was relegated to a supportive role, invoked primarily to corroborate or refute oral testimony rather than to serve as the substantive foundation for guilt. This chapter explores the comprehensive legal framework governing forensic evidence in India,

marking the seismic shift precipitated by the repeal of these colonial statutes and the enactment of the **Bharatiya Nagarik Suraksha Sanhita, 2023 (BNSS)**, the **Bharatiya Sakshya Adhiniyam, 2023 (BSA)**, and the **Bharatiya Nyaya Sanhita, 2023 (BNS)**.

The transition from the IEA to the BSA and from the CrPC to the BNSS is not merely a nomenclature change; it represents a fundamental jurisprudential pivot. The new legislative framework elevates forensic science from a discretionary investigative tool to a mandatory procedural requirement for serious offences. This chapter examines this transformation through a multi-dimensional lens. First, it dissects the statutory provisions, contrasting the archaic sections of the IEA with the technologically integrated mandates of the BSA. Second, it maps the institutional infrastructure of the Directorate of Forensic Science Services (DFSS), the Central Forensic Science Laboratories (CFSLs), and the National Forensic Sciences University (NFSU), which forms the operational backbone of these laws. Third, it traces the judicial evolution of forensic jurisprudence, analysing how the Supreme Court of India has navigated the complex interplay between scientific truth and constitutional rights under Articles 20(3) and 21. Finally, it evaluates the practical challenges of this new regime, utilising recent data on infrastructure backlogs and case studies to assess the gap between legislative intent and ground-level reality.

1.2 Statutory Framework: The Anatomy of Forensic Law

The governance of forensic evidence in India is tripartite, anchored in the substantive definition of crimes (BNS), the procedural mechanics of investigation (BNSS), and the rules of admissibility (BSA).

1.2.1 The Law of Evidence: Admissibility and Expert Opinion

The *Indian Evidence Act, 1872*, drafted by Sir James Fitzjames Stephen, was a masterpiece of

Victorian legal thought, predicated on excluding hearsay and on the primacy of direct perception. However, the complexity of modern crime involving cyber trails, DNA phenotypes, and complex toxicology rendered many of its provisions inadequate. The *Bharatiya Sakshya Adhiniyam, 2023*, attempts to bridge this gap.

1.2.1.1 The Expert Witness: Section 45 IEA vs. Section 39 BSA

Under the general principles of evidence, a witness can only testify to facts they have personally perceived. **Section 45 of the IEA** created a necessary exception to this rule, allowing the court to form an opinion based on the testimony of persons specially skilled in "foreign law, science, art, or in questions as to identity of handwriting or finger impressions".¹⁷²⁵ These persons were termed "experts."

Section 39 of the BSA retains this core principle but significantly expands the implicit scope of "science." While Section 45 IEA has often been interpreted by judicial activism to encompass ballistics and biology, Section 39 BSA is designed to operate within a digital-first legal ecosystem. The key distinction lies not only in the text but also in the legislative context. The BSA explicitly recognises the **"Examiner of Electronic Evidence"** (referred to in Section 79A of the *Information Technology Act, 2000*) as an expert whose opinion is relevant.¹⁷²⁶ This statutory recognition resolves a long-standing ambiguity regarding the status of private versus government cyber-forensic analysts.

The categorisation of expert opinion under the BSA follows a structured relevance model:

- **Section 39(1):** General relevance of expert opinion on science, art, and foreign law.
- **Section 39(2):** Specific relevancy of the Examiner of Electronic Evidence.

¹⁷²⁵ *Indian Evidence Act, 1872*, s. 45.

¹⁷²⁶ *Bharatiya Sakshya Adhiniyam, 2023*, s. 39; *Information Technology Act, 2000*, s. 79A.

- **Section 40:** Relevancy of facts bearing upon the opinion of experts (analogous to Section 46 IEA).
- **Section 41:** Opinions as to handwriting and digital signatures (analogous to Section 47/47A IEA).

It is crucial to note that, despite legislative modernisation, the *evidentiary value* of expert opinion remains advisory. The Supreme Court, in judgments such as *Malay Kumar Ganguly v. Dr Sukumar Mukherjee*,¹⁷²⁷ has held that expert opinion is not binding on the court. It is "opinion evidence," not substantive evidence, and must be weighed against other facts. However, the BSA, by mandating rigorous certification for digital evidence (discussed below), subtly shifts the weight of such evidence from "corroborative" to "foundational" in cyber-crimes.

1.2.1.2 The Digital Paradigm: From Section 65B IEA to Section 63 BSA

The most litigated and contentious aspect of forensic evidence in the last decade has been the admissibility of electronic records. Section 65B of the IEA, introduced in 2000, was a "special provision" intended to facilitate the admission of secondary electronic evidence without producing the original device. However, conflicting judgments from *Navjot Sandhu*¹⁷²⁸ (which allowed oral evidence to bypass Section 65B) to *Anvar P.V.*¹⁷²⁹ (which made the certificate mandatory) and finally *Arjun Panditrao Khotkar*¹⁷³⁰ (which settled the law) created a chaotic jurisprudential landscape.

Section 63 of the BSA seeks to terminate this uncertainty by codifying the *Arjun Panditrao* ratio and adding stringent forensic safeguards.

A. The Definition of Document:

Section 61 of the BSA expands the definition of "document" to include electronic and digital records. This is a critical semantic shift. Under

the IEA, electronic records were often treated as a distinct class requiring special handling. Under the BSA, they are "deemed documents," admissible as primary evidence if the original is produced, or as secondary evidence via the Section 63 route.

B. The Hash Value Mandate (Section 63(4)):

The most significant forensic innovation in the BSA is the requirement that the admissibility certificate include cryptographic hash values. Section 63(4) mandates that the certificate must not only identify the device and certify its proper operation but also state the hash value (SHA1, SHA256, MD5, etc.) of the electronic record.¹⁷³¹

- **Forensic Significance:** A hash value is a digital fingerprint. Even a single bit change in a file (e.g., editing a video frame) alters the hash value completely. By statutorily requiring the hash value to be recorded at the time of seizure/production, the BSA integrates the principle of "**Integrity of Evidence**" directly into the admissibility statute. This prevents the rampant defence of "tampering" or "deepfakes" that plagued trials under the IEA.
- **The Dual Certificate:** The Schedule to the BSA prescribes a two-part certificate:
 - **Part A:** To be filled by the owner/user of the device (confirming lawful control).
 - **Part B:** To be filled by an **Expert** (confirming the hash generation and technical parameters). This bifurcated responsibility ensures that a layperson does not certify technical integrity, a flaw in the erstwhile Section 65B regime.

1.2.2 Procedural Law: The Mandatory Mandate of BNSS

While the BSA governs *what* is admissible, the *Bharatiya Nagarik Suraksha Sanhita* (BNSS)

¹⁷²⁷ *Malay Kumar Ganguly v. Dr. Sukumar Mukherjee*, (2009) 9 SCC 221.

¹⁷²⁸ *State (NCT of Delhi) v. Navjot Sandhu*, (2005) 11 SCC 600.

¹⁷²⁹ *Anvar P.V. v. P.K. Basheer*, (2014) 10 SCC 473.

¹⁷³⁰ *Arjun Panditrao Khotkar v. Kailash Kushanrao Gorantyal*, (2020) 7 SCC 1.

¹⁷³¹ *Bharatiya Sakshya Adhiniyam*, 2023, s. 63(4).

governs *how* it is collected. The BNSS represents a departure from the "discretionary" model of investigation under the CrPC to a "mandatory" scientific model.

1.2.2.1 Compulsory Forensic Visitation (Section 176(3) BNSS)

Section 176(3) of the BNSS is arguably the most transformative provision in the history of Indian criminal procedure. It stipulates that for any offence punishable with imprisonment of **seven years or more**:

1. The Officer in Charge of the Police Station *shall* cause a forensic expert to visit the crime scene.
2. The expert *shall* collect forensic evidence.
3. The process *shall* be videographed on a mobile phone or electronic device.¹⁷³²

Legislative Intent: Under Section 157 of the CrPC, the Investigating Officer (IO) had the discretion to involve forensic teams. In practice, this meant that forensic experts were summoned only in high-profile cases, resulting in the loss of transient evidence (fibres, fingerprints, DNA) in the vast majority of serious crimes. Section 176(3) removes this discretion. The legislative intent, as articulated by the Parliamentary Standing Committee on Home Affairs, is to increase the conviction rate currently hovering around 57% for IPC crimes to 90% by anchoring investigations in irrefutable scientific fact rather than malleable oral testimony.¹⁷³³

Operational Implication: This provision applies to a wide range of offences, including Rape (Section 64 BNS), Murder (Section 103 BNS), Dowry Death, and Dacoity. It effectively mandates that the "Scene of Crime" (SOC) team serve as the first responder, thereby fundamentally altering the police's Standard Operating Procedure (SOP).

¹⁷³² *Bharatiya Nagarik Suraksha Sanhita, 2023*, s. 176(3).

¹⁷³³ Parliamentary Standing Committee on Home Affairs, *Report No. 247 on The Bharatiya Nagarik Suraksha Sanhita, 2023* (Rajya Sabha Secretariat, New Delhi, 2023).

1.2.2.2 Audio-Visual Documentation of Search (Section 105 BNSS)

Section 100 of the CrPC governs search and seizure and requires independent witnesses. However, "stock witnesses," or professional police witnesses, were common, casting doubt on the recovery of incriminating evidence.

Section 105 of the BNSS mandates the **audio-video recording** of the entire search and seizure process, including the preparation of the seizure list. This recording must be forwarded "without delay" to the District Magistrate or Sub-divisional Magistrate.¹⁷³⁴

- **Forensic Linkage:** This creates a digital forensic trail of the *physical* evidence. The video serves to authenticate the chain of custody at the most vulnerable point, the moment of recovery. It prevents the defence from arguing that the weapon was "planted" if the hash value of the search video is preserved in accordance with BSA standards.

1.2.2.3 Expansion of Biometric Collection (Section 349 BNSS)

The *Identification of Prisoners Act, 1920*, was repealed by the Criminal Procedure (Identification) Act, 2022, and its principles are incorporated into the BNSS. **Section 349** empowers the Magistrate to direct any person (arrested or not) to provide:

- Specimen signatures and handwriting.
- Finger impressions.
- **Voice samples.**

This provision overrides the limitations outlined in prior judicial pronouncements, thereby authorising the collection of voice exemplars for spectrographic analysis, a critical tool in an era of telephonic conspiracies and ransom demands.

1.2.3 Substantive Linkages: IPC vs. BNS

The substantive definitions of crime in the *Bharatiya Nyaya Sanhita* (BNS) have been

¹⁷³⁴ *Bharatiya Nagarik Suraksha Sanhita, 2023*, s. 105.

streamlined, but their prosecution is now inextricably linked to forensic capacity.

- **Murder (Section 103 BNS):** Previously Section 302 IPC. The definition remains largely the same, but the successful prosecution of a Section 103 offence now hinges on compliance with Section 176(3) BNSS. If a forensic team does not visit a murder scene, the defence can argue a statutory violation, potentially vitiating the trial.¹⁷³⁵
- **Sexual Offences (Section 64 BNS):** The definition of rape and sexual assault maintains the rigour of the post-Nirbhaya IPC amendments. However, the BNSS imposes strict timelines for medical reports (7 days) and mandates the use of Sexual Assault Evidence Collection Kits (SAECK), linking substantive liability directly to forensic speed and accuracy.

1.3 Institutional Setup and Infrastructure: The Backbone of the Law

Legislation is only as effective as the infrastructure that enforces it. The ambitious mandates of the BNSS and BSA presuppose a robust, ubiquitous, and efficient forensic infrastructure. This section analyses the current institutional framework and the gaps between the legislative mandate and the actual practice.

1.3.1 The Directorate of Forensic Science Services (DFSS)

At the apex of the forensic hierarchy is the **Directorate of Forensic Science Services (DFSS)**, established under the Ministry of Home Affairs (MHA). The DFSS acts as the nodal agency for policy formulation and oversees the **Central Forensic Science Laboratories (CFSLs)**.

- **CFSL Network:** There are currently **seven** operational CFSLs located in Chandigarh, Hyderabad, Kolkata, Bhopal, Pune, Kamrup (Assam), and Delhi (CBI).
- **Expansion:** An 8th CFSL has been approved for Samba (Jammu). The

government has also sanctioned the **National Forensic Infrastructure Enhancement Scheme (NFIES)** with an outlay of **₹2254.43 crore** (2024-2029) to establish **7 additional CFSLs** and upgrade existing ones.¹⁷³⁶

1.3.2 State and Regional Laboratories

While CFSLs handle complex cases and CBI referrals, the burden of the BNSS Section 176(3) mandate falls on the **State Forensic Science Laboratories (SFSLs)**.

- **Current Count:** There are **32 SFSLs** and **97 Regional Forensic Science Laboratories (RFSLs)** across India.¹⁷³⁷
- **Mobile Forensic Units:** To meet the requirement of crime scene visits, the government has approved **433 Mobile Forensic Vans** across various states. These vans are equipped with preliminary testing kits for blood, narcotics, and explosives, acting as "labs on wheels" to secure evidence during the golden hour.

1.3.3 The National Forensic Sciences University (NFSU)

Recognising the acute shortage of trained experts, the government established the **National Forensic Sciences University (NFSU)** in 2020. It is an Institution of National Importance, headquartered in Gandhinagar, Gujarat.

- **Role:** NFSU is not just an academic institution; it is a strategic asset designed to generate the "Forensic Experts" required by Section 176(3) BNSS.
- **Expansion:** The MHA has approved **9 additional campuses** with an outlay of **₹1309.13 crore**. The university conducts the Forensic Aptitude and Calibre Test

¹⁷³⁵ Bharatiya Nagarik Suraksha Sanhita, 2023, s. 103.

¹⁷³⁶ Ministry of Home Affairs, *Annual Report 2023-24* (Government of India, New Delhi, 2024).

¹⁷³⁷ *Ibid.*

(FACT) to certify professionals for laboratory recruitment.¹⁷³⁸

1.3.4 Infrastructure Data and Pendency Analysis (2023-2024)

Despite these investments, the data reveal a system under severe strain. The "infrastructure gap" poses the single biggest threat to the implementation of the new laws.

Table 1.1: Caseload and Pendency at Select CFSLs (2023-24)

Laboratory	Division	Cases Received	Exhibits Received	Cases Pending	Exhibits Pending
CFSL Kamrup	DNA	191	1363	14	119
	Documents	197	12,145	100	7,470
	Digital	215	1,157	96	175
CFSL Chandigarh	All	3,766	63,900	1,193	N/A

Data Source: Annual Reports 2023-24^{1739 1740}

Analysis:

- The Document Bottleneck:** The CFSL Kamrup data highlights a massive bottleneck in the Documents Division (forgery, handwriting). With 100 cases and more than 7,400 exhibits pending, the turnaround time is likely to exceed statutory limits, thereby delaying trials.
- Digital Overload:** The Digital Forensic divisions are overwhelmed. The rise in cybercrimes (up 31.2% in 2023) has flooded labs with smartphones and hard drives.¹⁷⁴¹ Each device requires imaging

and hashing, a time-consuming process. The pendency of 96 digital cases in Kamrup alone suggests that the new Section 63 BSA certificate regime will face logistical hurdles.

- Manpower Shortage:** The MHA reports that only **32,524** officers have been trained in forensic collection nationwide.¹⁷⁴² For a country with millions of FIRs annually, this number is insufficient to ensure mandatory forensic visits in every district.

1.4 Judicial Evolution: The Jurisprudence of Science and Rights

Statutory law provides the skeleton of the legal framework, but it is the judiciary that provides the flesh and blood. The Supreme Court of India has played a pivotal role in defining the constitutional boundaries of forensic evidence, navigating the tension between the court's "truth-seeking" function and the Constitution's "rights-protecting" function.

1.4.1 Self-Incrimination and the Body as Evidence (Article 20(3))

The most significant constitutional challenge to forensic science arises from **Article 20(3)**: "No person accused of any offence shall be compelled to be a witness against himself."

1.4.1.1 State of Bombay v. Kathi Kalu Oghad (1961)

This 11-judge Constitution Bench judgment remains the bedrock of forensic law in India. The Court was tasked with deciding whether compelling an accused to give fingerprints, handwriting samples, or thumb impressions violated Article 20(3).

- The Ruling:** The Court distinguished between "being a witness" (imparting personal knowledge) and "giving evidence" (providing identification material). It held that physical characteristics such as fingerprints are immutable and do not constitute

¹⁷³⁸ National Forensic Sciences University, *Annual Report 2023-24* (NFSU, Gandhinagar, 2024).

¹⁷³⁹ Central Forensic Science Laboratory (Kamrup), *Annual Report 2023-24* (DFSS, Ministry of Home Affairs, 2024).

¹⁷⁴⁰ Central Forensic Science Laboratory (Chandigarh), *Annual Report 2023-24* (DFSS, Ministry of Home Affairs, 2024).

¹⁷⁴¹ National Crime Records Bureau, *Crime in India 2023* (Ministry of Home Affairs, New Delhi, 2024).

¹⁷⁴² Ministry of Home Affairs, *supra* note 75.

"testimony" in the strict sense. Therefore, compulsion to provide them does not violate the right against self-incrimination.¹⁷⁴³

- **Significance:** This judgment provides the constitutional validity for Section 349 of the BNSS. Without *Oghad*, the modern biometric collection regime would be unconstitutional.

1.4.1.2 *Selvi v. State of Karnataka (2010)*

As forensic science advanced from physical biometrics to "mental" forensics, the Court drew a new red line. In *Selvi*, a 3-judge bench examined the constitutionality of **Narco-analysis, Polygraph, and Brain Electrical Activation Profile (BEAP)** tests.

- **The Ruling:** The Court held that these tests violate Article 20(3) because they extract "testimonial" information from the mind of the accused without their conscious control. Unlike fingerprints, the results of a Narco test are essentially statements. Compelling such a test also violates the **Right to Privacy** under Article 21.¹⁷⁴⁴
- **The Exception:** The Court allowed for the voluntary administration of these tests, provided strict guidelines (NHRC guidelines) are followed. Furthermore, while the *results* of the test (confessions) are inadmissible, any *physical evidence* discovered based on the information obtained (e.g., a murder weapon found based on a Narco statement) is admissible under Section 27 of the IEA (Section 23 BSA).

1.4.2 The Right to Privacy (Article 21) and DNA Profiling

The landmark judgment in *K.S. Puttaswamy v. Union of India (2017)*, which declared privacy a

fundamental right, has reshaped the landscape for DNA forensics.¹⁷⁴⁵

- **The Conflict:** DNA analysis reveals sensitive information beyond mere identity, medical history, paternity, and genetic predispositions. Mandatory DNA profiling serves a legitimate state aim (crime control) but must satisfy the proportionality test.
- **Judicial Balance:** In recent years, courts have applied the *Puttaswamy* test to forensic collection. In *Kattavellai @ Devakar v. State of Tamil Nadu (2025)*, the Supreme Court issued strict guidelines for DNA collection, emphasising the need for a "documented chain of custody" and "informed consent" where applicable, to prevent the state from becoming a surveillance entity.¹⁷⁴⁶
- **Paternity vs. Legitimacy:** In civil cases involving paternity, the Supreme Court in *R. Rajendran v. Kamar Nisha (2025)* reaffirmed that DNA tests cannot be ordered mechanically to rebut the presumption of legitimacy under Section 112 IEA. The "best interest of the child" and privacy rights override the quest for biological truth unless there is a compelling reason.¹⁷⁴⁷

1.4.3 The Standard of Proof: Circumstantial Evidence

In the absence of direct witnesses, forensic evidence often anchors the prosecution's case. The guiding principles were established in *Sharad Birdhichand Sarda v. State of Maharashtra (1984)*, a case involving poisoning (a forensic-intensive offence).

- **The "Panchsheel" Principles:** The Court held that in cases resting on circumstantial evidence:

¹⁷⁴⁵ *Justice K.S. Puttaswamy (Retd.) v. Union of India*, (2017) 10 SCC 1.

¹⁷⁴⁶ *Kattavellai @ Devakar v. State of Tamil Nadu*, 2025 (Supreme Court of India).

¹⁷⁴⁷ *R. Rajendran v. Kamar Nisha*, 2025 INSC 1304.

¹⁷⁴³ *State of Bombay v. Kathi Kalu Oghad*, AIR 1961 SC 1808.
¹⁷⁴⁴ v

1. Circumstances must be fully established.
2. Facts must be consistent *only* with the hypothesis of guilt.
3. Circumstances must be conclusive.
4. They must exclude every other hypothesis.
5. The chain of evidence must be complete.¹⁷⁴⁸

- **Forensic Relevance:** Forensic evidence acts as the "links" in this chain. If the viscera report is inconclusive or the chain of custody is broken, the chain snaps, leading to an acquittal. This places a premium on the *integrity* of forensic samples, a requirement now codified in the stringent certification norms of the BSA.

1.5 Digital Forensics and Electronic Evidence

The ubiquitous nature of digital devices has made "Electronic Evidence" central to modern investigation. The legal framework for this has transitioned from ambiguity to strict formalism.

1.5.1 The Legacy of Section 65B IEA

Section 65B of the IEA was intended to be a facilitative provision. However, it became a source of immense confusion.

- **Navjot Sandhu (2005):** The Supreme Court initially held that if the certificate was not produced, secondary evidence could still be given via oral testimony. This diluted the provision.¹⁷⁴⁹
- **Anvar P.V. (2014):** The Court overruled *Navjot Sandhu*, holding that Section 65B is a "complete code" and the certificate is mandatory. Electronic evidence without a certificate is inadmissible.¹⁷⁵⁰
- **Arjun Panditrao (2020):** The Court clarified that the certificate is required

only when the original device is *not* produced. It also settled who can sign the certificate.¹⁷⁵¹

1.5.2 The New Regime: Section 63 BSA

Section 63 of the BSA incorporates the wisdom of *Arjun Panditrao* while adding technical safeguards.

- **Primary vs. Secondary:** Section 61 BSA clarifies that if the original device is produced, it is primary evidence. If a copy is produced, Section 63 applies.
- **The Certificate:** As discussed in Section 3.2.1.2, the requirement for a **Hash Value** and a **dual signature (Owner + Expert)** in the Schedule is a game-changer.
- **Impact on Cyber Labs:** This provision mandates that a hash generation process must accompany every seizure of a digital device. Given the backlog in the digital divisions (e.g., 96 cases in Kamrup), this requirement threatens to create a significant bottleneck unless the "Expert" definition is interpreted broadly to include trained police officers, rather than only scientists.¹⁷⁵²

1.6 Case Studies in Implementation (2023-2025)

The efficacy of the new laws is best judged by their application in recent cases.

1.6.1 The Saran Triple Murder Case (2024)

This case, one of the first major convictions under the BNS/BNSS regime, serves as a model for the new forensic mandates.

- **Facts:** A brutal triple murder occurred in Saran, Bihar.
- **Investigation:** Under Section 176(3) BNSS, a forensic team immediately visited the scene. They collected blood-stained weapons and clothes, videographing the entire process as per Section 105 BNSS.

¹⁷⁴⁸ *Sbarad Birdhichand Sarda v. State of Maharashtra*, (1984) 4 SCC 116.

¹⁷⁴⁹ *State (NCT of Delhi) v. Navjot Sandhu*, (2005) 11 SCC 600.

¹⁷⁵⁰ *Anvar P.V. v. P.K. Basbeer*, (2014) 10 SCC 473.

¹⁷⁵¹ *Arjun Panditrao Khotkar v. Kailash Kushanrao Gorantyal*, (2020) 7 SCC 1.

¹⁷⁵² Central Forensic Science Laboratory (Kamrup), *supra* note 15.

- **Trial:** The biological evidence (DNA linkage) and the digital evidence (CCTV footage with Section 63 BSA certificate) were presented.
- **Outcome:** The seamless integration of forensic evidence allowed the court to frame charges within 14 days and deliver a conviction under Section 103 BNS within **50 days** of the crime. This speed was attributed directly to the elimination of procedural delays in forensic collection and the irrefutable nature of the scientific evidence.¹⁷⁵³

1.6.2 High Court Interpretations

Recent High Court rulings have begun to define the contours of the "Expert" under the BNSS.

- **Kerala High Court (2025):** In *Suresh v. State of Kerala*, the court mandated strict compliance with the audio-visual documentation rules, warning that failure to videograph the seizure could lead to an "adverse inference" against the prosecution. The court also emphasised the use of the **e-Sakshya** platform for uploading digital evidence to ensure chain-of-custody integrity.¹⁷⁵⁴

1.7 Critical Analysis and Future Outlook

The legal framework governing forensic evidence in India has undergone a significant modernisation. The shift from "may" to "shall" in Section 176(3) BNSS signifies a state commitment to scientific truth. The BSA's hash value requirement places India at par with global digital forensic standards.

However, a chasm remains between the *law in books* and the *law in action*.

1. **The Infrastructure Deficit:** The 2024 MHA report reveals that while budget outlays (NFIES) are high, the physical capacity (labs/experts) is still catching up. The pendency of thousands of exhibits in key

CFSLs suggests that mandatory timelines may lead to "forensic fatigue" or hurried, erroneous reports.¹⁷⁵⁵

2. **The Definition of Expert:** The BSA leaves the definition of "Expert" for Part B of the digital certificate ambiguous. If courts interpret this strictly (requiring a gazetted scientist), the system will collapse. If interpreted loosely (e.g., by any police officer), the integrity of the hash value may be compromised.
3. **Privacy Concerns:** The expansion of biometric collection to non-arrested persons under Section 349 BNSS tests the limits of the *Puttaswamy* judgment. The constitutionality of this specific provision will likely be challenged in the Supreme Court in the near future.

In conclusion, Chapter 3 establishes that the legal framework is no longer the hurdle; it is the enabler. The onus has now shifted to the executive machinery, the police, and the forensic scientists to operationalise these statutes. The success of the Bharatiya codes will depend not on the text of the law, but on the capacity of the forensic laboratory to deliver a report that withstands the scrutiny of both science and the Constitution.

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¹⁷⁵³ Bureau of Police Research & Development, *Success Stories of Implementation of New Criminal Laws* (BPR&D, New Delhi, 2025).

¹⁷⁵⁴ *Suresh v. State of Kerala*, 2025 KER 54366.

¹⁷⁵⁵ Ministry of Home Affairs, *supra* note 75.

- *Information Technology Act, 2000.*

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