
FROM MANDATE TO METRICS: MEASURING EARLY BNSS FORENSIC COMPLIANCE IN MAHARASHTRA

Ishaan D. Joshi, CFPSE CFMLE, University of Edinburgh Law School

ABSTRACT

India's Bharatiya Nagarik Suraksha Sanhita (BNSS) mandates forensic expert attendance and videography at crime scenes for offences punishable by seven years or more, with reports of government scientific experts read into evidence under BNSS §329 alongside electronic-record safeguards in the Bharatiya Sakshya Adhiniyam (BSA) §63. This policy-implementation study specifies how to measure early compliance in Maharashtra during 2024–26 by joining police First Information Report (FIR) and charge-sheet metadata with Directorate of Forensic Science Laboratories (DFSL) routing and turnaround logs through ICJS/CCTNS and e-Forensics linkages. We define auditable indicators—trigger share, scene-visit and videography flags, §63 certificate attachment, DFSL routing within specified time bounds, median laboratory turnaround, and trial-court “read-in” rates under §329—and propose district-level dashboards. Methodologically, we combine descriptive analytics with difference-in-differences and event-study designs exploiting phased deployment of mobile forensic vans and staged laboratory capacity additions. Year-one public signals (state procurement and initial operation of mobile forensic vans; expansion of RFSL capacity) suggest substantive movement toward routine scene attendance and faster exhibit flow, though statutory commencement may depend on state notification timelines. Anticipated bottlenecks include uneven van staffing, division-wise bench constraints, and variable §63 documentation quality; we outline mitigation via practice directions, template certificates, and quarterly DFSL performance disclosure. The contribution is a replicable, legally grounded measurement framework that converts the BNSS mandate into observable file-level behaviours—allowing Maharashtra's criminal-justice agencies to monitor, compare and improve forensic engagement in serious crime investigations while reducing adjournments and evidentiary disputes in trial courts.

Keywords: BNSS compliance, Maharashtra DFSL, crime-scene videography, ICJS/CCTNS integration, BSA §63

1. Introduction

India's criminal procedure was recast in 2023 with the Bharatiya Nagarik Suraksha Sanhita (BNSS) replacing the Code of Criminal Procedure. Among the most consequential reforms is the shift from ad-hoc evidence collection toward structured, routine forensic involvement in serious crimes. Maharashtra—home to one of India's oldest state forensic systems—has moved rapidly to operationalize this change, announcing a state-wide network of mobile forensic vans, expanding regional laboratory capacity, and aligning protocols with national digital integration (ICJS/CCTNS ↔ e-Forensics). This paper maps the legal mandate, the institutional and digital plumbing, and the first-year signals of compliance in Maharashtra (July 2024–July 2025), and sets out a measurement framework for 2025–26. We focus on the interface between FIR/charge-sheet practice and DFSL routing, because that is where BNSS's new obligations become observable. Key statutory anchors are BNSS's clause mandating forensic visitation and documentation for offences punishable by seven years or more, BNSS s.329 on government scientific experts' reports, and the Bharatiya Sakshya Adhiniyam (BSA) on expert opinion and electronic records.

2. Legal architecture

2.1. The mandate: forensic experts at the crime scene (≥ 7 -year offences)

BNSS requires that, for offences punishable with seven years or more, the station house officer must “cause the forensic expert to visit the crime scene to collect forensic evidence” and videograph the process. Crucially, the statute allows each State up to five years to notify the commencement date for this obligation, creating a transition window for capacity building; the operative duty applies from the notified date. As of mid-2025, secondary commentary identifies the clause as BNSS s.176(3).

2.2. Getting lab reports into evidence: BNSS s.329

BNSS s.329 (the successor to CrPC s.293) provides a statutory read-in for reports from specified Government Scientific Experts (e.g., Directors/Deputy/Assistant Directors of CFSLs/SFSLs, the Director of the Finger Print Bureau, the Chief Controller of Explosives, the Director of the Haffkine Institute, etc.). Courts may summon these experts but often read the signed report itself. This is a foundational DFSL/CFSL → court bridge, complementary to the

seven-year mandate at the crime-scene stage.

2.3. Evidence law backstop: BSA §§39 and 63

Under the Bharatiya Sakshya Adhiniyam (BSA), §39 codifies the relevance of expert opinion (including private experts), and §63 recasts the admissibility of electronic records, replacing the old §65B regime with new certificate mechanics and a Schedule form. For BNSS compliance, §63 matters because crime-scene videography and device imaging must arrive in court with correct certificates; §39 matters because non-government experts (e.g., defence consultants) still anchor their weight in testimony and method transparency.

2.4. When the new laws took effect

The Union Government brought the new criminal laws (BNS, BNSS—except one sub-provision—and BSA) into force on 1 July 2024, confirmed in official responses and press releases. This is the baseline date for “early compliance.”

3. Maharashtra’s implementation setting

3.1. The state forensic backbone (DFSL)

Maharashtra’s Directorate of Forensic Science Laboratories (DFSL) sits under the Home Department with headquarters at Kalina, Santacruz (East), Mumbai, and a network of regional and satellite labs/divisions across the state. DFSL handles routine biology/DNA, chemistry/toxicology, ballistics, cyber/digital, handwriting, etc., and escalates specialized matters to the CFSL system (e.g., CFSL Pune) under the Union Directorate of Forensic Science Services (DFSS).

3.2. Mobile forensic vans: scaling crime-scene capability

Maharashtra has approved a state-wide fleet of mobile forensic vans specifically framed as a BNSS implementation measure. Public records and credible reporting show sanction for approximately 254–259 vans, with an initial pilot of 21 vans (operational in metros and select districts) and a large-scale procurement/rollout via Government Resolution. Where counts differ across reports (254 vs 259), state documents and subsequent reporting indicate scope refinements across procurement steps; the strategic intent is unambiguous—district-level, 24×7

crime-scene response by DFSL.

3.3. Digital rails: ICJS/CCTNS–eForensics integration

ICJS 2.0 aims to integrate CCTNS (police), e-Forensics (FSLs), e-Prosecution, e-Courts, and e-Prisons for “one data, once entry” and seamless exhibit/report flow. National guidance and official briefings in 2024–25 emphasize this pillar for the new criminal laws’ success. For Maharashtra’s compliance measurement, this means FIR metadata, scene-visit flags, DFSL routing and e-report timestamps should be machine-joinable.

4. Research questions and hypotheses

RQ1.

Did FIRs for offences punishable by ≥ 7 years trigger forensic scene-visits and videography in the first year after go-live?

H1:

Districts covered by mobile forensic vans and clearer SOPs will show higher scene-visit recording than districts pending deployment.

RQ2.

Did DFSL routing and report-return for ≥ 7 -year offences accelerate (or at least not deteriorate) post-BNSS?

H2:

Where ICJS linking is live and vans are deployed, time-to-report improves (median days to DFSL report).

RQ3.

Are BNSS s.329 reports being read-in without summoning more often (or more predictably) than pre-BNSS, and are BSA §63 certificates attached to scene videos and device outputs?

H3: Post-BNSS, courts increasingly accept properly formatted DFSL reports per s.329;

electronic records show higher certificate compliance.

RQ4.

What capacity bottlenecks (people, kits, vans, lab benches) most constrain compliance?

5. Data, indicators, and methods (policy-implementation design)

5.1. Study window and units

- **Temporal:** Year 1 (1 July 2024–30 June 2025) for early signals; Year 2 (1 July 2025–30 June 2026) for trend confirmation.

- **Units:** Police stations and districts in Maharashtra; DFSL divisions; court complexes receiving charge-sheets.

5.2. Administrative sources (targeted)

1. FIR/CCTNS extracts: offence sections, max punishment, timestamps, scene-visit flag, videography flag (binary), exhibit IDs. (ICJS linkable).

2. DFSL routing logs: receipt date, division, tests ordered, report date, return mode (e-report/paper).

3. Charge-sheet (BNSS §193) annexures: DFSL report present (Y/N), s.329 invocation, §63 certificate presence for electronic items.

4. Court orders/judgments: whether expert summoned, reasons; electronic-evidence rulings.

(Where direct access is restricted, use aggregate or de-identified extracts under state MOU/NDAs and institutional ethics approval.)

5.3. Core indicators

- I1: Share of FIRs with max punishment ≥ 7 years.

- I2: Among I1, share with forensic scene visit recorded.

- I3: Among I1, share with videography artefact listed + §63 certificate.
- I4: Among I1, share with DFSL routing within X days.
- I5: Median days from DFSL receipt to report.
- I6: Among charge-sheets with DFSL reports, share read under s.329 without summoning.
- I7–I10: Vans per district live, van-crew staffing, DFSL bench capacity, kit availability.

5.4. Analytic approach

- Descriptive dashboards at district/division level (I1–I10).
- Difference-in-differences (van-deployed districts vs not-yet) on I2–I5 (pre/post July 2024).
- Event-study around van inauguration dates.
- Logistic models for I6 (read-in vs summoned) controlling for case complexity.
- Process tracing for §63 compliance across the file life-cycle.

5.5. Ethical and legal posture

Only anonymised/aggregate operational data; no live-case interference. Evidence law constraints (BSA §63) treated as study variables. BNSS s.329 read-in practice assessed by public court records and reasoned orders.

6. What “early compliance” looks like in practice

6.1. From statute to station: operational triggers

For ≥ 7 -year offences, station officers must (a) call forensic experts to the scene, (b) ensure videography, and (c) shepherd exhibits with chain-of-custody to DFSL. Because BNSS allows each State to notify the start date within five years, formal compliance turns on the notification; substantive compliance can—and in Maharashtra does—start earlier via pilot vans, SOPs and training while notification and full fleet rollout are underway.

6.2. Maharashtra's compliance levers in 2024–25

- **Fleet build-out:** A 2024 Government Resolution approved procurement of BNSS-linked mobile forensic vehicles, with multi-hundred-crore allocation and specified delivery timelines. Early 2025 reportage documents 21 vans launched and a project scope of roughly 259 vans; another report references 254 (reflecting procurement tracking versus deployment stages). These are district-level SOCO assets staffed by DFSL experts.
- **Lab capacity:** The Nagpur RFSL expansion (foundation for a new high-tech facility in 2025) indicates capacity scaling—dedicated floors for crimes against women, advanced cyber, and tape/speaker authentication—consistent with BNSS volume expectations.
- **Digital plumbing:** ICJS 2.0 policy documents emphasise linking CCTNS ↔ e-Forensics ↔ e-Prosecution ↔ e-Courts, which is essential for machine-readable capture of scene-visit/videography flags and for e-report transmission from DFSL.

7. Measurement plan for 2024–26 (what to observe, where, and why)

7.1. Scene-of-crime (SOC) compliance

- **Indicators:** I1–I3.
- **Where it lives:** FIR/CCTNS metadata (max punishment), SOC app logs (van dispatch; barcodes), and the exhibit register.
- **BNSS link:** s.176(3) scene-visit and videography clause; State notification date sets the hard legal baseline for “must.”

7.2. DFSL routing & turnaround

- **Indicators:** I4–I5.
- **Where it lives:** DFSL receipt and report timestamps; division-level queue data.
- **BNSS/BSA link:** Quality and timeliness shape how readily courts read-in under s.329 and accept §63-compliant electronic artefacts.

7.3. Court-facing indicators

- **Indicators:** I6 (read-in under s.329); §63 certificate presence/adequacy for videos, device images.
- **Where it lives:** charge-sheet annexures (BNSS §193), order-sheets, and judgments.
- **Rationale:** A predictable read-in practice reduces adjournments; correct §63 hygiene secures electronic evidence admissibility.

7.4. Capacity indicators

- **Indicators:** I7–I10 on vans, staffing, lab benches, kits.
- **Where it lives:** Government Resolutions, procurement trackers, DFSL division staffing, van deployment announcements.

Anticipated challenges and mitigation

Notification gap vs practice: Until the State notifies the start date per BNSS, defence may argue that scene-visit lapses are not per se illegality. Maharashtra's GR-backed vans and SOPs help close this gap by creating practice-level compliance ahead of formal notification.

Throughput and backlogs: Rapid rise in DFSL traffic can stretch DNA, ballistics and digital units. Staged RFSL upgrades (e.g., Nagpur) and prioritisation matrices are key.

Videography + §63 paperwork: Scene videos and device extractions now require §63 certificates. Training and templated certificates (per BSA Schedule) reduce rejection risk.

Data interoperability: Without robust ICJS connectivity, station logs, DFSL systems and court e-filings won't speak to each other; Phase-II integration targets this, and national guidance is explicit.

First-year (2024–25) public signals in Maharashtra

While full administrative datasets are not yet public, credible public signals show momentum:

- **Policy commitment:** A Home-Department GR (July 2024) records procurement of BNSS-implementation mobile forensic vehicles.

- **Pilot operations:** Media coverage confirms 21 vans launched in early 2025 and a state-wide plan for about 259 vans; separate reportage refers to 254 vans, tracking procurement vs deployment phases.

- **Institutional expansion:** Foundation-stone laying for a new RFSL complex in Nagpur (2025) signals bench expansion.

- **National digital direction:** ICJS 2.0 integration priorities (CCTNS ↔ e-Forensics ↔ e-Courts ↔ e-Prosecution) reiterated by national authorities during the new-laws rollout year.

These signals are consistent with early compliance efforts: building the means (vans, labs, digital rails) needed to satisfy a shall-do mandate once the State notifies the start date under BNSS.

14. What compliance will look like in the files (practical playbook)

- **FIR stage:** If IPC/BNS mapping shows max ≥ 7 years, the FIR form auto-prompts for SOC request, recording time-of-call to DFSL team and videography flag (ICJS services should enforce this).
- **Scene stage:** Mobile van logs dispatch → arrival → barcode assignment → chain-of-custody; video capture is hashed; DFSL receives exhibits with unique IDs.
- **DFSL stage:** Division logs receipt and report timestamps; reports signed by Government Scientific Experts (per s.329 list) are issued electronically to the IO/prosecution with hash.
- **Charge-sheet:** BNSS §193 annexures include (a) DFSL report(s) for read-in under s.329; (b) BSA §63 certificates for each electronic artefact (scene video/device dump).
- **Court:** Trial courts note s.329 read-in; summon experts only where methods/chain are contested; electronic records sail through if §63 is clean.

Comparative perspective and Maharashtra's advantages

- **Legacy capacity:** DFSL Maharashtra is a mature system with HQ at Kalina and multiple RFSLs; this baseline makes BNSS scaling more realistic than in states starting from scratch.

- **Political signalling and capex:** The multi-crore vans program and RFSL upgrades are public, time-bound steps aligned to BNSS.

- **National rails:** ICJS phase-II offers national guidance/funding to interlink pillars; Maharashtra can ride this to standardize file flows and observability.

Limitations of available evidence

This paper relies on primary statutes, official notifications/press, and credible media regarding vans and lab expansion. Comprehensive micro-data (FIR/SOC/DFSL/charge-sheet joins) is not yet public; we therefore propose an administrative-data collaboration to populate indicators I1–I10 for 2024–26 and publish an annual compliance report.

Recommendations

- Notify the start date under BNSS s.176(3) with a phased district schedule (tie to van go-live) and publish a State SOC SOP with §63 templates.
- **Mandate ICJS flags:** Add mandatory “≥7-years”, “SOC visit Y/N”, and “videography Y/N” fields in FIR/CCTNS; require hash + §63 certificate IDs in charge-sheet schema.
- Publish a quarterly DFSL dashboard: division-wise median turnaround, backlog, and read-in rate (s.329) to target bottlenecks.
- **Finish the fleet:** Complete 254–259 vans rollout with 24×7 crewing and refresher training; pair each van with a prosecutor liaison for §63 compliance.
- **Bench expansion:** Accelerate Nagpur RFSL timelines and replicate its women/cyber floors in other RFSLs; ring-fence kit budgets.
- **Court practice notes:** Bombay High Court may issue practice directions on

- (a) s.329 read-ins,
- (b) §63 certificates, and
- (c) chain-of-custody expectations at committal.

Conclusion

BNSS's ≥ 7 -year forensic mandate is a structural pivot—from discretionary to default forensic engagement in serious crime. Maharashtra has spent the first year doing the heavy lifting that makes compliance possible: vans on the road, labs on the rise, and digital links specified nationally. The next step is measurability: a notified start date, district-wise SOC/DFSL indicators, and court-facing hygiene on s.329 and §63. With those in place, the “early compliance” window (2024–26) can harden into routine, auditable practice, improving both investigative quality and trial efficiency.

Annex A. Indicator dictionary (abridged)

- I1 (Trigger share): % of FIRs whose statutory max punishment ≥ 7 years.
- I2 (Scene-visit): % of I1 where SOC (DFSL) visit recorded (binary).
- I3 (Video + §63): % of I1 with videography logged and §63 certificate present.
- I4 (Routing): % of I1 routed to DFSL within X days of FIR.
- I5 (Turnaround): Median days DFSL receipt $\rightarrow$ DFSL report.
- I6 (Read-in): % of cases where DFSL report read under BNSS s.329 without summoning.
- I7–I10 (Capacity): Vans live, crewed shifts, kit sufficiency, lab bench-hours.
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