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DIGITAL TRANSFORMATION AND ARTIFICIAL INTELLIGENCE INTEGRATION IN THE IRANIAN JUDICIAL SYSTEM: LEGAL INFRASTRUCTURE, REGULATORY FRAMEWORK, AND SYSTEMIC PREREQUISITES

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ABSTRACT: This article examines the legal infrastructure and systemic prerequisites for AI integration within Iran's judicial system. Using doctrinal and documentary analysis of binding instruments, it assesses institutional readiness across enabling capacities and governance safeguards. The analysis indicates that Iran has built a substantial enabling layer, and that registry-backed, rule-based automation is already operational in three legally consequential domains: heirs certification, financial enforcement under the Sayyad check system, and traffic bodily-injury compensation. In these domains, determinations that were historically produced through discretionary judicial steps are increasingly generated through interoperable registries and standardized workflows, grounded in pragmatic doctrinal accommodation and explicit statutory authorization.

By contrast, the protective layer has not developed at the same pace, particularly regarding transparency, data-subject rights, and effective contestability. To address this asymmetry, the article proposes a Qualified Human-in-the-Loop (Q-HITL) framework under which system outputs function only as advisory proposals and can acquire legal effect solely through mandatory validation (or reasoned rejection) by a legally accountable judge.

KEYWORDS: Artificial Intelligence; Digital Transformation of Justice; Judicial Digitization in Iran; Administrative Reallocation; Dejudicialization

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1. INTRODUCTION

Global justice administration is undergoing a fundamental transition, as paper-based traditions are increasingly replaced by data-centric models driven by the dual imperatives of efficiency and access[1]. Although this transition creates opportunities for automation, it also raises due process risks when embedded in specific institutional contexts. Against this background, this article examines AI integration within Iran's judicial system through doctrinal and documentary analysis of binding legal texts and strategic policy documents, assessing readiness across enabling capacities and governance safeguards. Recent Iranian scholarship has examined judicial AI mainly through feasibility and ethics-oriented analyses[2], but rarely offers a structured framework for assessing systemic readiness.

[1] OECD. (2025). Governing with artificial intelligence: The state of play and way forward in core government functions. OECD Publishing. *https://doi.org/10.1787/398fa287-en*

[2] Karimi, H. (2024). Possibility and barriers of using artificial intelligence to judge. Legal Studies in Digital Age, 3(2), 326-336. *https://doi.org/10.22048/LSDA.2025.10665.139*; Mohebbi, D., & Amiri, A. (2025). Ethical challenges of using artificial intelligence in justice and good governance. Legal Studies in Digital Age, 4(1), 83-98. *https://doi.org/10.22048/lsda.2025.10942.124*

Analytically, this article employs a hybrid theoretical lens combining fiqh-based permissibility principles with technological due process[3]. By 'fiqh-referential' governance, we refer to a legal system in which institutional authority derives from doctrinally recognized sources (fiqh) but permits pragmatic operational adaptation under principles such as *lā ḥaraj* (no undue hardship). This framework enables an analysis of how AI integration can be reconciled with existing accountability structures: fiqh-based permissibility defines who holds decision authority; technological due process defines how system-mediated steps must remain reviewable and contestable.

The assessment is grounded in three paradigmatic cases spanning non-contentious, commercial, and quasi-criminal domains: (i) heirs certification, where kinship-based inheritance determinations are generated through Civil Registration Association records and Civil Code provisions (Arts. 893–949)[4]; (ii) the New Check Law (Sayyad system), where validity verification, account blocking, and enforcement proceed through automated, networked banking infrastructure under the 2018 amendments; and (iii) traffic bodily-injury compensation, where triangulated dataflows among police, forensic, and insurance actors can replace routine judicial fact-finding under the default-validity regime introduced by the Seventh Development Plan Code and its 2025 Executive Bylaw. These cases illustrate that Iran's readiness is not merely aspirational: rule-based, registry-backed automation is already operational in legally consequential domains, raising immediate questions about procedural fairness and contestability.

1.1. Methodology and source materials

The study uses doctrinal and documentary analysis of binding legal texts (statutes and regulations) and judiciary policy documents. Policy texts are treated as indicators of institutional direction rather than enforceable safeguards. The analysis distinguishes legal obligation from policy orientation and does not claim measurable operational impact. As noted in recent scholarship[5], doctrinal analysis serves as the primary tool for assessing normative design and remains a precondition for subsequent empirical validation, though it assumes coherence in legal sources.

Each source is assessed through five criteria: legal effect (validity of digital outputs), attribution (allocation of responsibility), data integrity and traceability, interconnection and verification mandates, and contestability in administratively reallocated pathways[6]. International benchmarks are used

[3] Citron, D. K. (2008). Technological due process. Washington University Law Review, 85, 1249–1313. *https://openscholarship.wustl.edu/law_lawreview/vol85/iss6/2/*

[4] Civil Code of the Islamic Republic of Iran. (1928, as amended). Accessible at: *https://www.wipo.int/wipolex/en/legislation/details/7731*

[5] Theil, S. (2025). Carefully tailored: Doctrinal methods and empirical contributions in legal research. Oxford Journal of Legal Studies, 45(4), 1047–1075. *https://doi.org/10.1093/ojls/gqaf029*

[6] Citron, D. K. (2008). Technological due process. Washington University Law Review, 85, 1249–1313. *https://openscholarship.wustl.edu/law_lawreview/vol85/iss6/2/*; Wieringa, M. A. (2020). What to

only for context (UN DESA; Freedom House), whereas domestic reports (e.g., Mizan; IRNA) are treated as institutional indicators.

Two primary limitations qualify this study. First, direct access to judicial micro-data in Iran remains strictly controlled; even studies conducted within the judiciary's own research institutes report constraints driven by privacy concerns and bureaucratic fragmentation[7]. Accordingly, the analysis relies on binding instruments and operational outputs instead of primary statistical modeling. Second, the regulatory landscape is evolving rapidly (2024-2025), so the assessment focuses on structural readiness of the legal architecture with long-term sociological effects outside its scope.

2. DOCTRINAL FOUNDATIONS: PRAGMATIC ADAPTATION IN A FIQH-BASED SYSTEM

Section 2 argues that Iran's fiqh-oriented legal system has shown a historical capacity for pragmatic adaptation when institutional realities make strict implementation of an ideal requirement difficult. That background matters for AI because it points to an integration pathway in which AI is treated as decision-support, with legally operative steps remaining attributable to a legally qualified human.

At the constitutional and statutory level, judicial qualification is framed through a fiqh-referential structure: Principle 163 delegates the judge's "attributes and qualifications" to legislation grounded in fiqh. The statutory regime on judicial selection treats three preconditions as central: humanhood, maleness, and *ijtihād*. Yet the same legal order recognizes controlled accommodations where institutional necessity makes full realization impracticable. By tracing flexibility regarding *ijtihād* and maleness, and then extending the same accommodation logic to the remaining precondition (humanhood), this section explains how AI assistance can be integrated without treating AI as an adjudicator.

2.1. Pragmatic adaptation inside a fiqh-referential system: *lā ḥaraj*, authorization, validation

A doctrinal basis for pragmatic calibration is the fiqh rule of *lā ḥaraj* (no undue hardship). It justifies narrowing or suspending an otherwise applica-

account for when accounting for algorithms: A systematic literature review on algorithmic accountability. In M. Hildebrandt & C. Castillo (Eds.), Proceedings of the 2020 Conference on Fairness, Accountability, and Transparency (FAccT '20) (pp. 1–18). Association for Computing Machinery. *https://doi.org/10.1145/3351095.3372833*

[7] Farzammehr, M. A., Tabrizi, E., & Moghimbeygi, A. (2024). Using machine learning to predict performance of trial court administration: An empirical study with Iranian performance indicators of trial case processing. Journal of Statistical Research, 58(2), 385–395. *https://doi.org/10.3329/jsr.v58i2.80626*

ble requirement only to the extent necessary to remove non-ordinary hardship, and only so long as the hardship persists[8]. Institutionally, this explains how the legal system can retain ideal requirements yet adopt bounded administrative adjustments.

In positive law, such calibration often appears through a separation between (i) producing an input and (ii) producing legal effect. Two devices are especially relevant. Authorization (*izn/ijazah*) confers ex ante permission for an otherwise non-standard actor to perform a legally operative function under defined conditions. Validation/ratification (*tanfidh*) makes an output legally consequential only through ex post endorsement by the competent authority. These are practical techniques for keeping legal effect tied to a qualified bearer of authority even when the workflow includes auxiliary participants.

2.2. Authorization in response to the *ijtihād* constraint: *qāżī maʾdhūn*, and the limited route for women

A clear example is the statutory response to the classical requirement of *ijtihād*. Faced with scarcity of fully qualified mujtahids, the law creates a controlled workaround through *qāżī maʾdhūn* (an "authorized judge"). The operative mechanism is authorization: adjudicative capacity becomes valid through a defined permission regime rather than administrative convenience. Institutional continuity is preserved by routing legal validity through authorization, thereby keeping the doctrinal ideal formally intact.

Within the same scarcity-based framework, the statute also provides a limited route for employing qualified women with judicial rank. The significance for present purposes is the method: the system manages a practical mismatch through bounded legal channels, and it continues to present judicial authority as a fiqh-referential institution whose validity depends on legally recognized pathways of authorization.

2.3. Validation as a procedural arrangement: Family Protection Law (FPL), Article 2 (female advisor; written opinion; reasoned disagreement)

A second accommodation concerns decision-preparation rather than personal qualification. Article 2 of the FPL structures family adjudication around a presiding judge and a female judicial advisor, whose written, reasoned opinion must be referenced in the judgment; if the judge disagrees, reasons must be stated. The arrangement formally integrates a non-binding auxiliary input

[8] al-Ansari, M. (n.d.). Farāʾid al-uṣūl (al-Rasāʾil) [The Principles of Jurisprudence] (Vol. 2). Al-Maktabah al-Islāmiyyah.; al-Sadr, M. B. (1398 A.H.). Durūs fī ʿilm al-uṣūl (al-Ḥalqa al-Thālitha) [Lessons in the Principles of Jurisprudence, Third Cycle]. Dār al-Fikr al-Islāmī.

into the record without displacing the judge as the sole source of legal effect, and it treats disagreement as something that must be justified.

For AI governance, the relevance is straightforward: Iranian procedural design already recognizes a model in which a "proposal-like" contribution can be institutionally required and must be addressed; legal effect remains tied to the judge's attributable decision and to reasons where the proposal is rejected.

2.4. Humanhood, HITL/Q-HITL, and the statutory anchor in Article 113(a)

The remaining precondition in the statutory picture of judging is humanhood. Within a fiqh-referential and cautious interpretive environment, the operative legal question is not whether a machine can be treated as a judge; it is how non-human tools can be used in adjudicative workflows provided that legal effect and responsibility remain attributable to a legally qualified human. Similar feasibility debates in Iranian legal scholarship stress that AI may assist but cannot assume adjudicative authority[9].

In the governance vocabulary of automated decision systems, Human-in-the-Loop (HITL) denotes arrangements in which a human reviews, approves, or overrides system outputs within the decision cycle. For adjudication, the relevant variant is Qualified Human-in-the-Loop (Q-HITL): the human in the loop is a legally qualified decision-maker to whom authority, accountability, and contestability attach. Under Q-HITL, system outputs remain non-binding unless adopted or rejected by the competent human, who remains responsible for the outcome.

This allocation is stated in Article 113(a) of the Seventh Five-Year Development Plan, which authorizes the use of new technologies, explicitly including AI, as assistance "for the judge" and preserves the judge's personal responsibility. The implementing regulation operationalizes this by treating system outputs as proposals requiring final user confirmation, with the user able to modify or reject them. Institutionally, the pattern mirrors earlier accommodations: auxiliary outputs may shape workflow, but legal effect remains tied to an attributable human act.

This doctrinal pathway also aligns with Iran's wider statutory treatment of electronic records and machine-processed information, which generally treats technical outputs as legally usable only under integrity, attribution, and traceability conditions reinforcing the same separation between producing an output and producing legal effect.

The operational implications of this doctrinal pathway are examined in Section 6 through heirs certification, Sayyad enforcement, and traffic injury

[9] Karimi, H. (2024). Possibility and barriers of using artificial intelligence to judge. Legal Studies in Digital Age, 3(2), 326-336. *https://doi.org/10.22048/LSDA.2025.10665.139*

compensation, domains where the separation between system outputs and legal effect has already become institutionally consequential.

3. THE REGULATORY LANDSCAPE: FROM DIGITAL VALIDITY TO AI POLICY

This dimension addresses the regulatory layer that enables digitized judicial procedure and frames permissible uses of advanced technologies, including AI. In Iran, it consists of binding statutes and judiciary procedural instruments, alongside non-binding policy documents that signal direction; legal assessment turns on distinguishing the two. Although Iran lacks a centralized AI statute, the framework has expanded by recognizing electronic records, institutionalizing e-litigation, and defining AI as supportive assistance subject to human oversight.

3.1. Digital validity as a precondition: electronic records, signatures, and integrity

AI integration presupposes a legal environment in which electronic records have legally cognizable status. The Electronic Commerce Act (2003) normalized digital records for commercial exchange, but their probative use in litigation raises distinct demands. Doctrinal analysis suggests that standards for authentication and chain-of-custody remain uneven, leaving a gap between transactional validity and evidentiary reliability[10]. For AI-related workflows, digitized outputs must be able to enter legal reasoning as evidence, not merely administrative metadata.

A complementary statutory layer addresses the security environment of digitized governance. Cybercrime and data manipulation risks can undermine the reliability of procedural records, and therefore the legitimacy of system-mediated pathways. Legal instruments that criminalize unauthorized access, interference, and manipulation operate as indirect safeguards of the evidentiary and procedural infrastructure, even though they are not tailored to judicial AI. Their doctrinal function is to reinforce the integrity of digital procedural artifacts and to signal that the state treats digital tampering as legally consequential[11].

[10] Mollaei, A. P., Salarzaei, A., & Tabatabaei, M. (2024). A legal analysis of the challenges and enforcement mechanisms of electronic evidence in the Iranian judicial system. Legal Studies in Digital Age, 5(2), 1–25. *https://doi.org/10.61838/kman.lsda.5.2.5*

[11] Computer Crimes Law (2009)

3.2. Procedural institutionalization: judiciary instruments that routinize electronic litigation

"Systemic readiness requires more than the mere permission of digital forms; it demands institutionalization through binding rules that define interfaces and distribute responsibilities. Iranian scholarship emphasizes that e-litigation can expand efficiency, but it must not compromise core procedural guarantees[12]. Judiciary-issued by-laws function here as 'procedural architecture,' effectively establishing electronic access, service, and record generation as the dominant operational standard.

Within this digitized architecture, physical fallbacks persist as protective safeguards. Although electronic workflows have been routinized as the default, the Tribunal of Administrative Justice has intervened to prevent technical mandates from overriding statutory access rights. It has upheld certain electronic mandates in the name of transparency (e.g., electronic attorney contracts)[13], but annulled directives that made tax stamps or criminal complaints exclusively electronic, requiring physical submission to remain available[14]. The result is an operationally electronic system that retains a residual physical option to protect the right to defense.

Consequently, the routinization of electronic filing generates the standardization and traceability required for AI integration. By producing structured procedural traces at scale—timestamps, routing metadata, and standardized fields—the infrastructure creates the data foundation necessary for future decision-support tools, subject to the development of governance mechanisms for auditability[15].

3.3. Data governance statutes and the legal architecture of inter-institutional exchange

AI-adjacent judicial functions such as verification, enforcement support, and standardized administrative outputs depend on access to authoritative

[12] Mohseni, H., & Beheshtipour, Z. (2021). Adherence of e-justice to the basic principles of procedure: A comparative study in French law. Journal of Comparative Law, 5(2), 221–237. *https://doi.org/10.22080/lps.2022.22729.1292*; Shokri, 2021

[13] Tribunal of Administrative Justice. (2022). Judgment No. 140009970906011356 regarding the validation of the directive on mandatory electronic attorney contracts. Official Gazette of the Islamic Republic of Iran.

[14] Tribunal of Administrative Justice. (2021). Judgment No. 140009970905812407 on the annulment of the directive regarding exclusive electronic payment of attorneys' tax stamps. Official Gazette of the Islamic Republic of Iran.; 2023; 2025

[15] Fabri, M. (2024). From court automation to e-justice and beyond in Europe. International Journal for Court Administration, 15(3), Article 7. *https://doi.org/10.36745/ijca.640*; Wieringa, M. A. (2020). What to account for when accounting for algorithms: A systematic literature review on algorithmic accountability. In M. Hildebrandt & C. Castillo (Eds.), Proceedings of the 2020 Conference on Fairness, Accountability, and Transparency (FAccT '20) (pp. 1–18). Association for Computing Machinery. *https://doi.org/10.1145/3351095.3372833*

registries. The National Data and Information Management Law (NDIML) establishes a governance architecture for data custodianship, base data, and inter-institutional exchange, framing interoperability as a matter of public governance rather than ad hoc convenience and thereby strengthening prerequisites for registry-backed administration[16]. Yet studies of judicial e-services emphasize that organizational and cultural factors can disrupt interconnection even where mandates exist, so legal authorization does not guarantee operational reliability[17].

3.4. Strategic policy versus binding mandates: The status of the "National AI Document"

Merely featuring AI in national strategies does not equate to establishing an enforceable legal framework. To ensure precision, this analysis distinguishes between binding statutes and aspirational policy. A prime example is the National Artificial Intelligence Document, enacted by the Supreme Council of the Cultural Revolution in July 2024. Although this document establishes a 'National AI Organization' and sets ambitious goals for 2033 (Article 3), it functions primarily as a strategic roadmap rather than a source of justiciable rights.

Crucially, the document itself acknowledges the current legal vacuum. In Article 5 (Governance Infrastructures), it explicitly mandates the future 'drafting of necessary legal bills' to address liability, privacy, and algorithmic discrimination. This confirms that the institutional direction is set, yet the protective legal layer remains prospective. Consequently, for the purpose of judicial readiness, such documents should be treated as administrative guidance that signals intent, whereas actual operational authority is currently derived from older, generalist statutes like the Seventh Development Plan (Article 113) which authorizes technical modernization without yet providing specific AI safeguards[18].

4. DIGITIZATION AND DATAFICATION: GENERATING STRUCTURED PROCEDURAL RECORDS

Section 4 examines the extent to which Iran's judiciary has moved from isolated digital services toward systematic digitization that generates structured procedural data. This analytical dimension is distinct from the deployment of probabilistic AI and machine-learning (ML) systems: digitization

[16] Danaeefard, H., Babaee Mojarad, H., Khosravi, M., Morattab, Y., & Zinatbakhsh, J. (2024). The antecedents and consequences of the National Data and Information Management Law: A qualitative research. Iranian Journal of Public Policy, 10(3), 70–85. *https://doi.org/10.22059/jppolicy.2024.98675*

[17] Noori, R., Farrokh, M., & Mohebbati Dastjerdi, S. (2024). Challenges of organizational interoperability in the judicial integrated electronic service system. Public Management Researches, 17(65), 199–230. *https://doi.org/10.22111/JMR.2024.46687.6064*

[18] Supreme Council of the Cultural Revolution. (2024). National Artificial Intelligence Document of the Islamic Republic of Iran (Resolution No. 901). Official Gazette of the Islamic Republic of Iran.; Islamic Parliament of Iran. (2024). Seventh Five-Year National Development Plan Act. Official Gazette of the Islamic Republic of Iran.

can be extensive even when such AI remains aspirational or limited to pilots. Nonetheless, sustained digitization can supply technical prerequisites for algorithmic assistance by routinizing electronic interfaces and producing traceable procedural records[19].

ML readiness extends beyond data existence; it requires stable definitions, consistent quality across jurisdictions, and auditable traces that support reliable downstream analysis.

Available evidence suggests that some sub-systems may have crossed a datafication threshold insofar as they generate administrative records that can support experimental model training. Studies using case management records from Tehran's General Civil Courts report datasets with sufficient structure to support machine learning classification with high reported accuracy[20]. The key question, therefore, is whether governance frameworks are mature enough to manage the transition in which passive record-keeping gives way to active algorithmic analysis.

4.1. From e-services to integrated procedural architecture

Court digitization becomes a systemic prerequisite when it operates as an integrated procedural architecture rather than a set of isolated services. Two operational indicators are central: integrated identity and access (consistent authentication and routing), and integrated temporal traceability (standardized, time-stamped logs that enable reconstruction and audit).

A foundational layer is the Sana system (Electronic Judicial Service System), established under the 2016 By-law on the Use of Computer or Telecommunication Systems. Sana functions as mandatory infrastructure for authentication and electronic service of process and is designed to capture procedural events such as timestamps, access logs, and delivery receipts as auditable traces.

This infrastructure has also supported broader e-justice practices. Official reporting suggests extensive use of secure video-link channels for prisoner hearings[21]. As electronic records become the primary medium of litigation,

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[19] Fabri, M. (2024). From court automation to e-justice and beyond in Europe. International Journal for Court Administration, 15(3), Article 7. *https://doi.org/10.36745/ijca.640*; Wieringa, M. A. (2020). What to account for when accounting for algorithms: A systematic literature review on algorithmic accountability. In M. Hildebrandt & C. Castillo (Eds.), Proceedings of the 2020 Conference on Fairness, Accountability, and Transparency (FAccT '20) (pp. 1–18). Association for Computing Machinery. *https://doi.org/10.1145/3351095.3372833*

[20] Farzammehr, M. A., Tabrizi, E., & Moghimbeygi, A. (2024). Using machine learning to predict performance of trial court administration: An empirical study with Iranian performance indicators of trial case processing. Journal of Statistical Research, 58(2), 385–395. *https://doi.org/10.3329/jsr.v58i2.80626*

[21] reported at approximately 85% of relevant hearings; Mizan Online. (2025a, November 17). Head of the Judiciary Statistics & ICT Center: 85% of investigative and trial sessions for cases involving prisoners were held electronically. *https://www.mizanonline.ir/fa/news/4867341*

integrity, authenticity, attribution, and traceability of digital artifacts become conditions of procedural reliability; Iranian analyses therefore stress building enforcement mechanisms against manipulation into procedural design[22].

4.2. The gateway layer: Electronic Service Offices and the governance of data entry

Built upon Sana is a gateway layer managed by Electronic Judicial Service Offices. These offices standardize case inputs before they reach the court by transforming heterogeneous claims into predefined fields and drop-down classifications within the Case Management System (CMS).

This, in turn, implies governance by design: requiring users to fit disputes into fixed menus can reshape how grievances are framed and what becomes legible to downstream decision making[23]. Standardization can reduce entry errors and increase consistency, but it can also compress narrative nuance and generate classification bias by privileging the categories embedded in interfaces.

4.3. Datafication, standardization, and the limits of "ML readiness"

Official reports indicate that a high proportion of judicial notices are served electronically[24]. However, digitization must be distinguished from datafication. Electronic storage does not automatically yield the structured, machine-readable records required for reliable algorithmic processing. Research on algorithmic accountability emphasizes that downstream model reliability is constrained by upstream data quality and definitional stability[25].

Pilot studies confirm that data exists, yet it suffers from significant representational and normative limitations. For instance, Farzammehr and co-workers successfully trained logistic regression models on case management records[26]. However, a critical examination reveals that the study oper-

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[22] Mollaei, A. P., Salarzaei, A., & Tabatabaei, M. (2024). A legal analysis of the challenges and enforcement mechanisms of electronic evidence in the Iranian judicial system. Legal Studies in Digital Age, 5(2), 1–25. *https://doi.org/10.61838/kman.lsda.5.2.5*

[23] Shokri, M. (2021). Inadequacies of Iran's electronic judicial services in facing the rights of clients. Laws of New Technologies, 2(4), 227–251. *https://doi.org/10.22133/mtlj.2022.334470.1081*

[24] Reported at 96%; Mizan Online. (2025b). Over 96% of judicial notices are served electronically in Iran. *https://www.mizanonline.ir/fa/news/4854165*

[25] Wieringa, M. A. (2020). What to account for when accounting for algorithms: A systematic literature review on algorithmic accountability. In M. Hildebrandt & C. Castillo (Eds.), Proceedings of the 2020 Conference on Fairness, Accountability, and Transparency (FAccT '20) (pp. 1–18). Association for Computing Machinery. *https://doi.org/10.1145/3351095.3372833*

[26] Farzammehr, M. A., Tabrizi, E., & Moghimbeygi, A. (2024). Using machine learning to predict performance of trial court administration: An empirical study with Iranian performance indicators of trial case processing. Journal of Statistical Research, 58(2), 385–395. *https://doi.org/10.3329/jsr.v58i2.80626*

ationalizes "court performance" strictly as a function of clearance rates and processing speed. Training algorithms on such metrics risks entrenching a form of techno-solutionism, where judges are nudged to prioritize rapid disposal over substantive fairness[27]. Furthermore, the study relied on a small sample of 119 records from only 21 branches due to what the authors explicitly cite as "bureaucratic hurdles" and restricted access, confirming that the enabling data infrastructure remains fragmented even for internal researchers.

Similarly, Tabrizi and Farzammehr utilized divorce registry data to predict outcomes[28], yet their model relied on socio-economic proxies (such as unemployment rates from census data) rather than internal case-file narratives. This inadvertent admission demonstrates that the judiciary's internal records are not yet sufficiently datafied to support semantic analysis of legal merits. Consequently, these studies demonstrate a technical proof-of-concept for localized administrative analysis, but they do not establish system-wide readiness for adjudicative AI.

4.4. Traceability and technological due process

Digitization can strengthen contestability when it yields traceable records and durable audit trails. Citron's account of "technological due process" emphasizes that when computational systems shape public decision pathways, procedural fairness requires transparency, explanation, and meaningful review, including the capacity to identify errors and reconstruct how they occurred[29].

In court settings, this implies concrete requirements: retention of reliable logs for submissions and service events; recording of modifications with attribution and chronology; and an accessible disclosure pathway that enables parties and reviewing bodies to examine relevant trails. Role-based access controls should be paired with protected audit logging so the system can show what changed, who changed it, and when.

The European Ethical Charter likewise frames transparency, quality and security, and human control as safeguards for rights in judicial environments[30]. Iran's digitization program can generate the raw materials of contestability, but contestability depends on whether traces are accessible, intelligible, and reviewable within institutional design.

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[27] UN General Assembly (2025)

[28] Tabrizi, E., & Farzammehr, M. A. (2024). Classifying divorce cases in Iranian judiciary courts using machine learning: A predictive perspective. Journal of Sciences, Islamic Republic of Iran, 35(2), 147–157. *https://doi.org/10.22059/jsciences.2025.383202.1007887*

[29] Citron, D. K. (2008). Technological due process. Washington University Law Review, 85, 1249–1313. *https://openscholarship.wustl.edu/law_lawreview/vol85/iss6/2/*

[30] Council of Europe. (2018). European ethical charter on the use of artificial intelligence in judicial systems and their environment. CEPEJ. *https://rm.coe.int/ethical-charter-en-for-publication-4-december-2018/16808f699c*

4.5. Interoperability constraints and organizational limits

Digitized procedure depends on interoperability across institutional boundaries, including stable linkages to registries for identity, address, assets, and legal status. Empirical research on Iran's integrated electronic service system identifies organizational and cultural obstacles, managerial constraints, cost pressures, and misalignment between processes and technology as significant sources of disruption[31]. Even extensive digitization may fail to produce reliable structured procedural data if interoperability is uneven, if gateway practices vary, or if system components do not match procedural realities.

These constraints have direct due process implications. Unstable linkages can increase risks of identity mismatches, defective service, erroneous verification, and delay, each of which can undermine procedural fairness. Accordingly, where digitization policies or by-laws were adopted in 2024–2025, the careful claim is that they mandate or intend architectural features, not that implementation outcomes have already stabilized.

5. INTEROPERABILITY AND REGISTRY INTERCONNECTION: THE ARCHITECTURE OF VERIFICATION

Section 5 examines whether interconnected registries can function as an infrastructural prerequisite for AI-enhanced judicial administration. Many efficiency gains arise less from prediction than from authoritative verification through standardized cross-institutional queries. These functions scale only when interconnection is legally mandated, institutionally organized, and operationally reliable. The analysis therefore asks whether the legal architecture for interconnection exists, what it is designed to enable, and what governance risks follow as procedural steps become registry-backed.

A concrete illustration is the judiciary's reported "smart financial inquiry" service, presented as a verification tool for locating assets relevant to enforcement[32]. Even if performance figures are treated cautiously as official claims, the example signals an institutional move toward registry-backed administrative outputs, where scale depends on interoperable access to authoritative sources rather than adjudicative reasoning.

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[31] Noori, R., Farrokh, M., & Mohebbati Dastjerdi, S. (2024). Challenges of organizational interoperability in the judicial integrated electronic service system. Public Management Researches, 17(65), 199–230. *https://doi.org/10.22111/JMR.2024.46687.6064*

[32] Mizan Online. (2025c). Smart financial inquiry system: 4,458,041 inquiries registered (1400–1403) and expanded usage. *https://www.mizanonline.ir/fa/news/4871215*

5.1. Interconnection as a statutory governance project rather than *ad hoc* exchange

The National Data and Information Management Law[33] frames data exchange and "base data registries" as objects of public governance rather than discretionary administrative cooperation. For judicial interoperability, this matters because key judicial databases are placed within the base-registry architecture, creating a statutory mandate for structured interconnection through standardized channels and assigned custodianship, in lieu of case-by-case requests.

At the same time, the NDIML's protective logic is primarily custodial: it emphasizes confidentiality and security duties for data-holding bodies, but it does not clearly articulate a parallel set of data-subject procedural entitlements (for example, transparency about system-mediated queries, access and correction rights, or meaningful objection pathways). If registry-backed outputs increasingly shape legal effects, the absence of explicit rights to understand, challenge, and correct underlying data can weaken procedural fairness even when interconnection itself is legally authorized.

Moreover, the NDIML's institutional governance design preserves judicial autonomy in ways that can be double-edged. Article 3 excludes "judicial matters" from the general interoperability working group's remit, which may protect the judiciary from external interference, yet it can also decouple judicial data practices from cross-government protective standards that would otherwise strengthen baseline accountability, common safeguards, and harmonized oversight.

5.2. What registry interconnection can enable in judicial administration

Interconnected registries can support legally meaningful steps across the litigation lifecycle. In civil procedure and enforcement contexts, the capacity to verify identity and legal status, validate addresses for service, discover assets relevant to execution, and confirm ownership records can reduce manual verification burdens and shorten procedural cycles. The underlying institutional logic is straightforward: when authoritative registries can be queried through standardized channels, courts and affiliated administrative units can rely less on paper submissions and discretionary verification, thereby increasing administrative throughput.

The paper treats such capabilities as governance-relevant even when they do not involve "AI" in a strict technical sense. Registry-backed verification is a precondition for later decision-support tools and is already a form of system

[33] NDIML (2022)

mediation that reshapes litigation burdens. As operationalized in heirs certification (Section 6.2), check enforcement (Section 6.3), and traffic-accident compensation (Section 6.4), verification can shift from discretionary judicial steps to automated or semi-automated determinations anchored in database status and cross-registry confirmation.

These capabilities also shift the locus of vulnerability. When procedural actions become dependent on registry data, erroneous or outdated entries can generate legally consequential outcomes. A digitized judiciary that relies on interconnection must therefore treat correction and contestation of underlying data as part of procedural fairness. Technological due process scholarship frames this as a precondition for meaningful contestability[34].

5.3. Operational unevenness: legal mandates do not ensure reliable interoperability

A readiness analysis must distinguish the existence of a legal framework from the stability of operational interoperability. Based on assessments reported by judges' office managers, Noori and co-workers emphasize that disruptions in information exchange reflect organizational and cultural barriers as much as technical connectivity, with cost and managerial constraints also prominent[35].

This point matters for claims about AI-enhanced justice. In the absence of reliable interconnection, the potential for consistent data-driven verification remains compromised. This fragility imposes structural limits on any future AI tools that depend on stable access to authoritative sources. Interconnection, then, serves as both a prerequisite for scaling system mediation and a test of governance resilience: increasing operational scope inevitably ties judicial outcomes more tightly to the health of cross-institutional data streams.

5.4. Governance implications: secondary use, transparency, and data-subject rights

Interconnection can generate procedural opacity: parties may not know which registries were queried, which fields were relied upon, or how discrepancies were resolved. As registry-backed outputs become practically binding, errors can propagate quickly and remedies can become harder to access. Work on technological due process and algorithmic legitimacy warns that system-mediated administration undermines fairness where affected persons

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[34] Citron, D. K. (2008). Technological due process. Washington University Law Review, 85, 1249–1313. *https://openscholarship.wustl.edu/law_lawreview/vol85/iss6/2/*

[35] Noori, R., Farrokh, M., & Mohebbati Dastjerdi, S. (2024). Challenges of organizational interoperability in the judicial integrated electronic service system. Public Management Researches, 17(65), 199–230. *https://doi.org/10.22111/JMR.2024.46687.6064*

cannot contest inputs, obtain meaningful review, or receive intelligible disclosure about how a result was produced[36].

Interoperability should be paired with safeguards that make registry-backed steps auditable and contestable, including durable query logs, notice and disclosure pathways, accessible correction and review mechanisms, and purpose-limitation and secondary-use controls to reduce mission creep.

Registry interconnection can accelerate judicial administration, but because it can produce legally significant effects, it intensifies the need for a protective layer. The governance question is therefore the procedural conditions under which registry-backed pathways remain transparent, correctable, and reviewable.

Comparable developments in the European Union have sought to systematize such safeguards within AI-driven dispute resolution frameworks, emphasizing categorization of systems, transparency obligations, and procedural guarantees for users interacting with automated or semi-automated processes[37].

6. REGULATORY DESIGN AND OPERATIONAL REALLOCATION: FROM COURT-CENTERED PROCESSING TO REGISTRY-BACKED DEFAULTS

Section 6 assesses whether administrative reallocation in Iran is shifting from court-centered processing toward registry-backed default pathways, where legally significant outputs are generated through standardized data queries and rule-based validation. The question is whether reallocation is being designed as a regulated architecture that assigns tasks to non-judicial bodies, relies on authoritative registries, and reserves judicial intervention for objections and contested cases.

6.1. Regulatory design: reallocation as an intended architecture

Iran's Seventh Five-Year Development Plan Act contains explicit mandates for administrative reallocation. Article 113 authorizes default, registry-backed pathways for heirs certification and traffic-injury compensation and anticipates executive bylaws adopted by the Cabinet after confirmation

[36] Citron, D. K. (2008). Technological due process. Washington University Law Review, 85, 1249–1313. *https://openscholarship.wustl.edu/law_lawreview/vol85/iss6/2/*; Grimmelikhuijsen, S., & Meijer, A. (2022). Legitimacy of algorithmic decision-making: Six threats and the need for a calibrated institutional response. Perspectives on Public Management and Governance, 5(3), 232–242. *https://doi.org/10.1093/ppmgov/gvac008*

[37] Vilalta Nicuesa, A.E. & Saldaña, M.G. (2025). AI-driven alternative and online dispute resolution in the European Union: An analysis of the legal framework and a proposed categorization. *Computer Law & Security Review* 57

by the Head of the Judiciary. This design matters because it frames reallocation as formal institutional architecture rather than an informal shortcut[38].

A parallel regulatory signal appears in the judiciary's Directive on Smartization and Electronicization of Judicial Processes and Case Files. Its provisions envisage systems capable of reviewing case information and proposing appropriate procedural steps, and simultaneously reserving legally operative acts for competent authorities. For this dimension, the key point is that Article 19 explicitly links the use of "new technologies" in outputs such as heirs certification and check-related execution to confirmation by a competent judicial authority[39].

6.2. Heirs certification as a registry-backed administrative pathway

Heirs certification (*govahi-ye enhesar-e verasat*) offers a paradigmatic case of reallocation enabled by datafication. Historically, the certificate established the fact and date of death, the identity of heirs, and their legal shares in a non-contentious judicial process. Under the executive bylaw for Clause (th) of Article 113, issuance is shifted to the Civil Registration Organization through a system-mediated pathway: once the death event is registered, the certificate is to be generated and electronically notified within twenty days, without requiring a prior request from heirs or other beneficiaries[40].

Two structural factors make this reallocation technically feasible. First, the Civil Registration Organization maintains a family-relationship database recording identities, vital events, and kinship links. Second, inheritance shares are largely computable as a mapping from kinship relations onto statutory formulas. The bylaw operationalizes this by mandating online exchange of relevant judicial and administrative data, including final judgments affecting personal status, and by requiring cross-registry verification for variables that condition shares or eligibility[41].

Reallocation is not unconditional. Contestation is routed through an administrative-judicial ladder: objections may be filed within ten days before the Civil Registration dispute-resolution board, and its decision is appealable to a competent court within twenty days. The by-law also provides correction pathways for clerical errors and preserves a judicial route where certificates cannot be issued due to missing data[42]. These features show that de-judiciali-

[38] Islamic Parliament of Iran (2024); Cabinet of Ministers. (2025). Executive Bylaw of Clause D, Article 113, Seventh Five-Year Development Plan Act (Acceleration of processing traffic accidents resulting in non-intentional bodily injuries), as amended 2025. Official Gazette of the Islamic Republic of Iran.; Cabinet of Ministers. (2025b). Executive Bylaw of Clause Th, Article 113, Seventh Five-Year Development Plan Act (Issuance of heirs certification by the Civil Registration Organization). Official Gazette of the Islamic Republic of Iran.

[39] Head of the Iranian Judiciary, (2024)

[40] Cabinet of Ministers (2025b)

[41] Cabinet of Ministers (2025b)

[42] Cabinet of Ministers (2025b)

zation is paired with defined objection mechanisms, but ones that depend on timely notice and accurate upstream registries.

6.3. Rule-based enforcement and the Sayyad architecture: the case of the Check Law

Reallocation is also visible in financial enforcement. The Law on Amendments to the Law on Issuance of Checks and its Sayyad infrastructure reorganize enforceability around a central database and networked enforcement, reducing routine court involvement to validation of standardized identifiers and bank-issued certificates[43].

The most striking mechanism is the automated restrictions regime. After non-payment is registered in the Central Bank's integrated system, the system notifies all banks online; after twenty-four hours, banks must apply restrictions and block the issuer's funds across accounts up to the unpaid amount[44]. This is a form of disintermediated execution: enforcement is initiated by a registry event and propagated as an automated command through the inter-banking network, without requiring a prior court judgment on the underlying dispute.

Article 23 also preserves a judicial execution pathway: the holder may request an execution order from the competent court, and the issuer has ten days after service to pay, arrange payment, or introduce executable assets; otherwise enforcement proceeds under the law on financial judgments[45]. Defenses exist (e.g., conditional issuance, guarantees, theft, or fraud), but filing them does not automatically suspend execution; suspension requires a judicial order and may be conditioned on security. Contestability thus exists, but operates ex post against a fast restrictions layer.

6.4. Automated compensation for bodily injuries: interoperability across police, forensic, and insurance data

A third vector targets routine traffic-related bodily injuries (*tasādo fāt-e jarḥī*) through a default administrative pathway. Under Clause (d) of Article 113 and its executive bylaw, The Police Command of the Islamic Republic of Iran (FARAJA) prepares an electronic accident report and croquis, determines the cause, and notifies parties and the insurer or compensation fund through the Sana e-notification system. The Legal Medicine Organization issues a digital assessment of injury severity, also notified through Sana; parties and, where relevant, the insurer or fund have one week to object[46].

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[43] Islamic Parliament of Iran. (2018). Law on Amendments to the Law on Issuance of Checks (New Check Law). Official Gazette of the Islamic Republic of Iran.

[44] Islamic Parliament of Iran (2018)

[45] Islamic Parliament of Iran (2018)

[46] Cabinet of Ministers (2025a)

If no objection is lodged within the one-week window, the insurer or fund is legally obliged to pay within twenty days after the objection period expires, without a court judgment. If an objection is lodged, or if the injuries fall under specified serious-crime categories or cannot be reliably classified, the file is referred to the competent judicial authority. The architecture therefore treats the judge primarily as an exception handler: routine claims are resolved through interoperable police and forensic data, with judicial review triggered by objection or exceptional conditions[47].

6.5. Governance implications: contestability, transparency, and responsibility allocation

Across inheritance, check enforcement, and traffic-injury compensation, registry-backed automation now produces legally consequential effects quickly. Yet the protective architecture has developed unevenly. The governance risks arise whenever legal effects depend on system-mediated defaults and short objection windows: errors in upstream registries, failures of notification, or identity mismatches can translate into automatic restrictions, certificates, or payment obligations before affected persons can respond.

A readiness-oriented governance strategy should treat contestability and responsibility allocation as design requirements for reallocation. This implies traceable logs for registry access and decision triggers, notice about material data sources, accessible channels for rapid correction, and calibrated suspension where plausible error or irreparable harm is shown. These safeguards provide the institutional basis for Q-HITL: scalable algorithmic pathways may assist, but legally operative effects must remain attributable, reviewable, and contestable through qualified human oversight.

7. READINESS ASSESSMENT: THE STRUCTURAL ASYMMETRY

In this analysis, Systemic Readiness is defined as the structural alignment between the enabling infrastructure (data, networks, and algorithms) and the protective governance safeguards required to manage them. A system is deemed 'ready' only when its capacity to execute automated decisions is matched by its capacity to correct errors and protect rights.

Drawing on the doctrinal analysis and operational case studies, this section synthesizes the findings into a structured readiness assessment. The core finding is a persistent structural asymmetry: Iran has established a sophisticated "enabling layer" of digital infrastructure and statutory authorizations, but the "protective layer" of governance safeguards has not developed at a commensurate pace.

[47] Cabinet of Ministers (2025a)

7.1. The Asymmetry Thesis: Algorithmic speed *versus* analog contestability

The enabling layer has successfully transitioned from digitization to automation in key domains. As detailed in Section 6, the legal system now supports registry-backed workflows that produce binding effects without immediate judicial intervention. The Sayyad check system (Section 6.3) demonstrates the capability for networked execution (blocking accounts nationwide within 24 hours), and the traffic-injury compensation regime (Section 6.4) establishes a presumption of finality that compels payment if not contested within seven days.

However, the protective layer remains uneven: even as the enabling architecture operates at algorithmic speed, mechanisms of contestability remain functionally analog. There is no statutory requirement for ex ante notification before a Sayyad block, nor a dedicated expedited digital channel to contest registry errors in the traffic workflow. This velocity gap means automated execution outpaces the citizen's reactive remedy. Readiness is therefore high for administrative throughput but low for procedural due process. This asymmetry contrasts with emerging European approaches that frame digital justice as inherently "people-centric," emphasizing accessibility, fairness, and user-oriented safeguards as co-equal design requirements rather than downstream corrections[48].

7.2. Operational readiness: The reliance on hybrid safety nets

Operational readiness is characterized by a "hybrid" maturity. On one hand, the foundational datafication threshold has been crossed in specific subsystems. As shown in Section 4, the Sana infrastructure captures traceable procedural events, and pilot studies confirm that case management data is sufficiently structured to support experimental machine learning models[49].

Yet the system lacks the reliability to abandon physical fallbacks. The Tribunal of Administrative Justice has repeatedly annulled mandates for exclusive electronic processing (e.g., tax stamps and criminal complaints), indicating that operational readiness is not yet robust enough to fully replace physical access (see Section 3.2). The system thus relies on a hybrid safety

[48] Esteban de la Rosa, Fernando, 'Towards a People-Centric Digitalization of Justice Systems: Fostering Empowerment, New Rights, and Fair Treatment amid the Digital Divide', in Fernando Esteban de la Rosa, Pablo Cortés, and Nuria Marchal Escalona (eds), *Digitalization and Artificial Intelligence in Courts: Opportunities and Challenges* (Oxford, 2025; online edn, Oxford Academic, 22 Aug. 2025), *https://doi.org/10.1093/9780198918752.003.0002*, accessed 3 May 2026.

[49] Farzammehr, M. A., Tabrizi, E., & Moghimbeygi, A. (2024). Using machine learning to predict performance of trial court administration: An empirical study with Iranian performance indicators of trial case processing. Journal of Statistical Research, 58(2), 385–395. *https://doi.org/10.3329/jsr.v58i2.80626*

net, retaining paper-based options as a fail-safe against exclusionary risks. Readiness is conditional upon maintaining these physical parallels.

7.3. Alignment with international benchmarks

Although Iran's infrastructural focus aligns with global efficiency trends[50], its oversight model diverges from international benchmarks. The OECD (2025) stresses robust accountability mechanisms and transparency about how systems influence decisions, safeguards that remain underdeveloped in the NDIML's custodial framework. The UN Special Rapporteur similarly warns against techno-solutionism, where efficiency tools displace scrutiny without safeguards[51]. Iran's rapid deployment of automated enforcement in financial and inheritance workflows risks conflating system certainty with legal correctness, leaving limited visibility into how registry-backed determinations are generated.

Table 1. Comparative positioning: enabling vs. protective layers

Dimension	Iran	High-income OECD benchmark*
Enabling infrastructure	Strong (e-justice, registries, workflows)	Strong (integrated e-justice systems)
Protective safeguards	Weak (data-subject rights, contestability)	Moderate–strong (DP laws, access, ADR)
Oversight model	Embryonic Q-HITL	Diverse HITL / audit regimes
Key challenge	Asymmetry (enabling exceeds protective)	Balancing efficiency with rights

* Based on OECD (2025), UN DESA e-Government Survey (2024), and Oxford Insights Government AI Readiness Index (2024).

8. CONCLUSION: SYSTEMIC PREREQUISITES FOR RESPONSIBLE INTEGRATION

The analysis reveals a structural asymmetry in Iran's judicial digital transformation. The judiciary has consolidated a powerful enabling layer through interoperable registries and automated enforcement, evidenced by the Sayyad check system, heirs certification, and registry-backed compensation. Yet the protective regulatory layer has not developed at a commensurate pace, cre-

[50] World Bank. (2024). Global trends in AI governance: Evolving country approaches. World Bank Group.

[51] UN General Assembly (2025)

ating a velocity gap in which registry-backed execution outpaces procedural contestability.

To align this operational trajectory with the systemic prerequisites of justice, two fundamental conditions must be established within the legal infrastructure.

8.1. The Doctrinal Prerequisite: Q-HITL as Jurisprudential Alignment

For AI integration to remain legally valid under Iranian law, the tension between algorithmic automation and judicial authority (*wilayah*) must be resolved so that the constitutive act of judgment (*inshā*) remains human-attributable. Q-HITL satisfies this prerequisite by defining system outputs as preparatory advisory proposals, not autonomous judgments or binding presumptions. Legal effect is generated only through the competent judge's review and validation, keeping authority human, reviewable, and contestable.

High-throughput use is compatible with this allocation only if the validation step resists rubber-stamping under speed and volume. The interface should therefore incorporate three minimal safeguards: risk-based triage (flagging low-confidence or high-stakes outputs), active validation (affirmative confirmation of specified legal elements), and traceability (durable decision logs and registry references). Without such friction, efficiency tools can slide into techno-solutionism when speed metrics displace substantive fairness[52].

Doctrinally, this calibrated supervision parallels the governance logic of court control over outcomes generated through ADR, particularly arbitral awards. Judicial review in these models is limited yet decisive: courts do not re-litigate merits; instead, they test jurisdictional predicates, minimum due-process guarantees, and public-policy constraints before enforcement, or when setting aside an award[53]. The parallel for Q-HITL is the same division of labor: delegated processing reduces workload only if legal effect is attributed at an accountable human checkpoint. The judge therefore need not replicate computational steps; rather, it must verify legally relevant parameters and intensify scrutiny when contestation arises.

Furthermore, the procedural hierarchy provides a secondary fail-safe: because decisions produced under Q-HITL remain subject to appellate review

[52] UN General Assembly (2025)

[53] United Nations. (1958). Convention on the Recognition and Enforcement of Foreign Arbitral Awards (New York Convention). *https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/new-york-convention-e.pdf*; United Nations Commission on International Trade Law. (2006). UNCITRAL Model Law on International Commercial Arbitration (1985), with amendments as adopted in 2006. *https://uncitral.un.org/en/texts/arbitration/modellaw/commercial_arbitration*; van den Berg, A. J. (2007). New York Convention of 1958: Refusals of enforcement. ICC International Court of Arbitration Bulletin, 18(2), 1–35. *https://cdn.arbitration-icca.org/s3fs-public/document/media_document/media012125877992500 2007_icc_bulletin_aj_van_den_berg_denials_of_enforcement.pdf*

(*tajdid-nazar*), targeted human scrutiny can be concentrated precisely where the affected party challenges the systemic output.

8.2. The Regulatory Prerequisite: From Executive Directives to Risk-Based Statutes

Doctrinal alignment secures the internal logic of adjudication, but responsible integration also requires an external regulatory anchor capable of establishing enforceable rights and allocating liability. Existing executive directives, including frameworks that facilitate data exchange, do not by themselves supply the protective safeguards required for high-stakes justice applications.

A sustainable framework requires risk-based primary legislation. The ongoing legislative process on the National Artificial Intelligence Bill, assessed by the Research Center of the Islamic Parliament of Iran[54], provides a stronger platform than ad hoc by-laws for codifying safeguards in high-risk domains such as justice. At minimum, legislation should allocate civil liability for institutions that design, deploy, or rely on system outputs; codify data-protection duties calibrated to judicial uses; and establish procedural rights that make contestability effective, including accessible routes to correct registry errors and obtain reasoned responses when automated outputs are relied upon in contested matters. The objective is symmetrical governance: the citizen's capacity to challenge machine-mediated execution should be as robust as the state's capacity to deploy it.

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[54] Research Center of the Islamic Parliament of Iran. (2025). Expert opinion on the "National Artificial Intelligence Bill" [Persian] (Serial No. 20596, 2025, April). Research Center of the Islamic Parliament of Iran.

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