

# ARTIFICIAL INTELLIGENCE AND PATENT LAW: AN ANALYSIS OF INVENTORSHIP AND OWNERSHIP THROUGH THE DABUS LITIGATION FRAMEWORK

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**Abstract**—Contemporary artificial intelligence systems demonstrate capabilities for generating technical solutions with reduced human intervention, thereby challenging established patent law principles requiring natural persons as inventors. This research examines inventorship and ownership challenges when artificial intelligence contributes substantially to patentable innovations. A comparative examination of DABUS patent applications across United Kingdom, European Patent Office, and United States jurisdictions, combined with evaluation of United States Patent and Trademark Office guidance documents from 2024 and 2025, forms the methodological foundation. The investigation addresses why patent frameworks mandate human inventors, ownership allocation mechanisms involving artificial intelligence, and policy implications of alternative regulatory approaches. Through doctrinal legal methodology and comparative jurisprudence analysis, four regulatory frameworks are evaluated: preserving current human-centric models, implementing statutory deeming mechanisms, establishing limited legal personhood, and creating specialized intellectual property regimes. Assessment criteria include innovation promotion, accountability frameworks, administrative feasibility, and international harmonization prospects. Application of this analytical framework to India's Patents Act, 1970 identifies regulatory gaps and recommends legislative modifications. Findings reveal fundamental tensions between doctrinal consistency and technological accommodation, with implications for global patent systems.

**Index Terms**—Artificial intelligence, patent law, inventorship, ownership, DABUS litigation, comparative legal analysis, USPTO guidance, Indian Patents Act

## I. INTRODUCTION

ARTIFICIAL intelligence evolution has transitioned from computational assistance tools to systems capable of autonomous technical problem-solving. Contemporary machine learning algorithms design pharmaceutical compounds, optimize structural engineering solutions, and develop novel materials with minimal direct human cognitive involvement in creative processes. This technological progression challenges patent law foundations premised on natural persons as invention creators.

The intersection of artificial intelligence capabilities and patent doctrine became prominent through patent applications submitted by Dr. Stephen Thaler designating DABUS (Device for Autonomous Bootstrapping of Unified Sentience) as sole

inventor. Patent authorities in United Kingdom, European Patent Office, United States, and additional jurisdictions rejected these applications, confirming human-only inventorship requirements. Judicial decisions, notably the 2023 UK Supreme Court judgment and 2022 US Court of Appeals for Federal Circuit opinion, established doctrinal positions while leaving unresolved questions regarding ownership structures, incentive mechanisms, and patent system adaptation for autonomous artificial intelligence.

### A. Research Motivation

Patent law fulfills dual objectives: compensating inventors for knowledge disclosure and incentivizing continued innovation. Both objectives presume human agency. When artificial intelligence systems generate inventions, traditional doctrines encounter four interconnected challenges:

- 1) **Inventorship Attribution:** When conception occurs within artificial intelligence processing, can humans who trained, prompted, or deployed the system claim inventorship status?
- 2) **Ownership Allocation:** If artificial intelligence cannot qualify as inventor, which parties own patent rights in artificial intelligence-generated inventions?
- 3) **Disclosure Requirements:** How should applicants accurately represent artificial intelligence contributions without invalidating applications?
- 4) **Policy Coherence:** Which incentive structures optimally promote artificial intelligence innovation while maintaining accountability?

These challenges possess practical significance as pharmaceutical and materials research increasingly employs generative computational models, requiring inventors and patent practitioners to determine appropriate artificial intelligence contribution characterization.

### B. Research Questions

This investigation addresses four primary questions:

**RQ1:** Under existing patent frameworks, what doctrinal and policy rationales support limiting inventorship to natural persons?

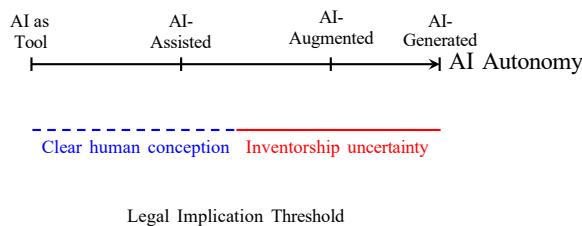


Fig. 1. AI Contribution Spectrum: From tool to autonomous inventor, with legal implications demarcated by the threshold where human conception becomes uncertain.

**RQ2:** When artificial intelligence substantially contributes to or autonomously generates inventions, who should hold patent rights and through which legal mechanisms?

**RQ3:** What policy trade-offs exist among different legal approaches regarding innovation incentives, accountability, disclosure integrity, and litigation risk?

**RQ4:** Which lessons from DABUS litigation and USPTO guidance apply to India under Patents Act, 1970, particularly considering requirements for true and first inventors?

### C. Research Contributions

This work provides:

- Comprehensive comparative analysis of DABUS litigation outcomes across UK, EPO, and US jurisdictions
- Original taxonomy of policy alternatives for artificial intelligence inventorship and ownership with criteria-based evaluation
- Integration of USPTO 2024 and 2025 guidance into comparative framework
- India-specific analysis applying comparative framework to Patents Act, 1970
- Visual analytical tools for practitioners and policymakers

### D. Paper Structure

Section II establishes background on artificial intelligence invention types and patent fundamentals. Section III reviews related scholarship. Section IV describes legal frameworks in key jurisdictions. Section V presents DABUS case chronology. Section VI conducts comparative analysis. Section VII evaluates policy options. Section VIII applies framework to India. Section IX concludes with future research directions.

## II. BACKGROUND

### A. Artificial Intelligence Contribution Spectrum

Artificial intelligence participation in invention generation exists along a continuum, illustrated in Fig.1. At one extreme, artificial intelligence serves as passive computational tool where human inventors formulate hypotheses, design experiments, and interpret results while artificial intelligence performs calculations. At the opposite extreme, artificial intelligence systems autonomously identify problems, generate candidate solutions, evaluate alternatives, and output novel inventions with minimal human direction beyond initial training.

Intermediate scenarios include AI-assisted invention where humans use artificial intelligence to explore design spaces while retaining control over problem definition and solution selection. AI-augmented invention involves artificial intelligence proposing solutions that humans evaluate and refine with balanced contributions. AI-generated invention occurs when artificial intelligence autonomously produces inventive concepts with human roles limited to recognizing utility and filing applications.

This spectrum matters legally because patent systems require inventor identification based on conception. If artificial intelligence contributions cross thresholds where artificial intelligence, rather than humans, performs conception mental acts, traditional inventorship doctrine experiences strain.

### B. Patent Law Fundamentals

Patent law distinguishes inventorship from ownership. Inventorship constitutes factual determination of who conceived the invention. Ownership represents legal determination of who holds exclusionary rights.

*1) Inventorship:* An inventor contributes to claimed invention conception. Conception represents definite and permanent idea formation in inventor's mind of complete and operative invention. Conception constitutes mental act distinct from reduction to practice or problem recognition. In collaborative inventions, co-inventors must contribute significantly to conception without requiring equal contributions.

Patent statutes historically assume natural person inventors. US Patent Act references inventor or inventors and whoever invents. European Patent Convention Article 60(1) states rights belong to inventor or successor in title. UK Patents Act 1977 section 7 provides patent grants to inventor or title-deriving persons. India's Patents Act, 1970 section 6 allows applications by true and first inventor.

*2) Ownership:* Patent ownership may differ from inventorship through assignment, employment agreements, or statutory provisions. In United States, inventors initially own inventions but may assign rights to employers or other parties. Work-for-hire doctrines can vest ownership in employers when employees invent within employment scope. In India, section 6 permits applications by true and first inventor or title-deriving persons, with employer ownership recognized under section 6(b) for employment-course inventions.

Assignment requires transfer from inventor to another person. If artificial intelligence systems constitute actual inventors, no human inventors exist from whom to assign rights, creating legal gaps.

### C. Tool Theory Versus Agency

A central conceptual question addresses whether artificial intelligence should be characterized as tool wielded by human inventors or agent capable of inventive activity. Under tool theory, artificial intelligence analogizes to microscopes, computers, or laboratory instruments aiding human inventors without conceiving. Under agency theory, sufficiently advanced artificial intelligence could perform conception mental acts,

TABLE I  
TAXONOMY OF ARTIFICIAL INTELLIGENCE INVENTORSHIP SCHOLARSHIP

Type	Focus and Scope
Doctrinal Analysis	Interpretation of existing statutes and case law; DABUS decision analysis; inventorship requirement comparison across jurisdictions
Policy & Normative	Proposals for legal reform including <i>sui generis</i> rights, deeming provisions, personhood; normative arguments on incentive theory and accountability
Empirical & Interdisciplinary	Surveys of artificial intelligence role in research and development; economic modeling of incentive effects; computer science perspectives on autonomy

potentially qualifying as inventor if legal personhood were recognized.

Most jurisdictions currently adhere to tool theory, treating artificial intelligence as sophisticated instrument. This approach maintains doctrinal consistency but may experience strain as artificial intelligence capabilities advance toward autonomous problem formulation and solution.

### III. RELATED WORK

Scholarship on artificial intelligence and patent law has expanded significantly since 2019 when DABUS applications attracted attention. Literature classifies into three categories as shown in Table I.

#### A. Doctrinal Analysis

World Intellectual Property Organization produced extensive analysis identifying inventorship and ownership as central challenges, noting patent systems were designed without contemplating non-human inventors [1]. Subsequent publications surveyed national approaches and synthesized policy considerations [2], [3].

EPO decision in J 8/20 analyzed in guidance and press releases concluded European Patent Convention designation requirement presumes natural person inventors [4], [5]. Academic commentators examined DABUS decisions focusing on statutory construction, policy rationales, and procedural issues [6].

#### B. Policy and Normative Proposals

Normative scholarship proposes various reforms. Some argue for maintaining human-only inventorship, emphasizing accountability and doctrinal stability [13], [14]. Others propose deeming provisions where humans controlling or prompting artificial intelligence could be deemed inventors under defined conditions [15].

A minority advocates limited legal personhood for artificial intelligence systems, analogizing to corporate personhood [16]. Critics argue this would undermine incentive theory and create enforcement difficulties.

*Sui generis* rights are proposed as alternatives, creating new protection categories for artificial intelligence-generated

inventions distinct from patents [17]. However, *sui generis* systems raise coordination problems for international treaties.

#### C. Empirical and Interdisciplinary Work

Empirical research on artificial intelligence impact on patenting remains nascent. Studies survey patent filings mentioning artificial intelligence or machine learning, finding rapid growth [18]. Others model economic effects of different ownership rules [19]. Interdisciplinary work brings computer science perspectives on autonomy and creativity [20].

## IV. LEGAL FRAMEWORKS: COMPARATIVE OVERVIEW

#### A. United States

1) *Inventorship*: US patent law derives from Constitutional Patent Clause and is codified in Title 35 US Code. Section 101 provides whoever invents or discovers may obtain patents. Section 115 requires applications include inventor oaths, identifying inventor and affirming original inventor status. Case law defines conception as definite idea formation of complete and operative invention, a mental act performed by natural persons [12].

In *Thaler v. Vidal*, US Court of Appeals for Federal Circuit affirmed that inventor under Patent Act requires natural person [7]. The court reasoned statute's use of whoever and individual, along with oath requirements signed by inventor, presuppose human inventors.

2) *Ownership*: Inventors initially own inventions but may assign rights to others. Employment agreements often require employees to assign inventions made within employment scope. When artificial intelligence generates inventions, if humans are deemed inventors, standard assignment mechanisms apply. If no human qualifies as inventor, ownership gaps emerge.

3) *USPTO Guidance*: In February 2024, USPTO issued guidance clarifying inventorship for artificial intelligence-assisted inventions [9]. Guidance reaffirmed only natural persons may be inventors but acknowledged artificial intelligence use does not automatically disqualify persons from inventorship. Key inquiry addresses whether natural persons made significant contributions to claimed invention conception.

November 2025 revised guidance provided additional examples clarifying that persons designing artificial intelligence systems with capability to generate inventive concepts may be inventors if persons made significant contributions to ultimately claimed inventions [10]. Merely presenting problems to artificial intelligence and recognizing useful output does not constitute inventorship.

#### B. United Kingdom

1) *Inventorship and Ownership*: UK Patents Act 1977 implements European Patent Convention in domestic law. Section 7 specifies who may be granted patents: inventor or successor in title, employer in certain cases, or person entitled under foreign law. Section 13 requires applications state inventor.

UK Intellectual Property Office rejected DABUS application, holding Patents Act reference to inventor and requirements for providing inventor name presuppose human inventors. On appeal, UK Supreme Court in *Thaler v. Comptroller-General of Patents* held inventor must be person, meaning natural person, and artificial intelligence cannot be named as inventor [8].

The Court reasoned Patents Act provisions, including requirements to state inventor name and address and provisions for inventor compensation, assume human inventors. The Court noted recognizing artificial intelligence as inventor would require legislative amendment.

#### C. European Patent Office

1) *Legal Framework*: European Patent Convention governs European patent applications. Article 60(1) provides rights to European patents belong to inventor or successor in title. Rule 19 requires inventor designation in applications.

EPO Guidelines for Examination state inventors must be natural persons [6]. Inventor designation serves to establish who conceived invention and supports entitlement determination.

2) *Decision in J 8/20*: In DABUS application EP 18 275 163, applicant designated DABUS as inventor stating entitlement derived from being owner and creator of DABUS. EPO refused application for failure to designate inventor in accordance with Rule 19 EPC.

Applicant appealed to Legal Board of Appeal, which issued decision J 8/20 [4]. Board held EPC designation requirement presupposes inventor is natural person, reasoning EPC language implies human characteristics, designation serves to identify inventive thought source which only humans provide, and allowing artificial intelligence as inventor would undermine designation purpose and create inconsistencies with national laws.

#### D. India

1) *Patents Act, 1970*: India's patent system is governed by Patents Act, 1970 [11]. Section 6 specifies who may apply for patents: true and first inventor, person being assignee of true and first inventor, or legal representative of deceased inventor or assignee.

Section 6(b) clarifies that for inventions made by employees in employment course, employers may apply if invention relates to employer business and was made using employer resources.

Act does not explicitly define inventor, but section 2(1)(y) defines true and first inventor excluding persons who import inventions or derive inventions from others without substantial contribution. This negative definition suggests inventor must be person capable of legal relationships and moral rights.

2) *Current Position*: India has not faced DABUS-equivalent cases, and neither Patent Office nor courts have issued formal guidance on artificial intelligence inventorship. However, doctrinal analysis suggests India likely requires inventors be natural persons. Requirement to state true and first inventor and provisions for inventor compensation presuppose human inventors.

3) *Ownership and Entitlement*: Section 6 provides routes for non-inventors to obtain patents: assignees and legal representatives. If artificial intelligence generates inventions, human applicants might argue entitlement as assignee of artificial intelligence owner. However, this requires artificial intelligence could hold rights initially, which India's legal system does not recognize.

Employer ownership under section 6(b) might apply if employees use artificial intelligence in employment course. Employees could be deemed inventors if they made significant contributions, and employers would hold rights.

#### V. DABUS LITIGATION TIMELINE

Fig. 2 presents chronological development of DABUS-related events across jurisdictions.

##### A. Initial Filings and Rejections

Dr. Stephen Thaler filed patent applications in multiple jurisdictions designating DABUS, described as creativity machine, as sole inventor. Thaler stated he owned DABUS and derived entitlement to invention from ownership and creation of DABUS.

UKIPO refused application in December 2019, holding Patents Act requires inventor be natural person. EPO issued similar refusal in December 2019, finding inventor designation did not comply with EPC requirements. USPTO rejected applications in April 2020, determining Patent Act requirements presuppose human inventors.

##### B. Appeals and Judicial Decisions

1) *EPO Legal Board*: Thaler appealed EPO refusal to Legal Board of Appeal. In decision J 8/20 issued December 2021, Board dismissed appeal [4]. Board held EPC requires designation of inventor who is natural person, purpose of inventor designation is identifying person whose mental activity led to invention, machines lack legal personhood and cannot perform legal acts associated with inventorship, and argument that denying artificial intelligence inventorship leaves inventions unprotected is policy concern for legislators.

2) *US Court of Appeals*: Thaler appealed USPTO rejection to US District Court for Eastern District of Virginia, which granted summary judgment to USPTO. Thaler then appealed to Court of Appeals for Federal Circuit.

In August 2022, CAFC issued opinion affirming district court [7]. Court applied statutory construction canons and held Patent Act use of whoever in section 101 and individual in section 115 refers to natural persons, not machines. Act requires inventor oath which presupposes human agency. Legislative history and predecessor statutes consistently assumed human inventors. Expanding inventorship to artificial intelligence would require clear congressional authorization.

3) *UK Supreme Court*: Thaler appealed UKIPO refusal through UK courts, reaching Supreme Court. In December 2023, Supreme Court dismissed appeal [8]. Court held Patents Act 1977 requires inventor be natural person as evidenced by references to inventor name and address, inventor compensation, and derivation of title from inventor. Artificial intelligence



Fig. 2. Timeline of DABUS litigation and related guidance developments (2018-2025).

cannot be inventor because it lacks legal personhood and cannot hold rights. Ownership of artificial intelligence system does not automatically confer entitlement to its inventions because entitlement requires derivation from inventor who is person.

### C. Guidance Developments

In response to growing artificial intelligence use in invention, USPTO issued formal guidance in February 2024 [9]. Guidance clarified only natural persons can be inventors but use of artificial intelligence tools does not preclude person from being inventor if person made significant contribution to conception.

November 2025 revised guidance [10] expanded on these principles, providing additional examples and emphasizing claim-by-claim analysis.

## VI. COMPARATIVE ANALYSIS

Table II summarizes jurisdictional approaches across key dimensions.

### A. Inventorship Tests

All examined jurisdictions require inventors be natural persons. This consensus rests on multiple rationales:

1) *Statutory Language*: Patent statutes use terms courts interpret as referring to humans. US Patent Act requirement for inventor oath which must be signed and sworn presupposes human agency. UK Patents Act provisions for inventor compensation and moral rights assume human inventors. EPC designation requirement serves to identify human source of inventive thought.

2) *Conception as Mental Act*: Inventorship doctrine centers on conception—definite and permanent idea of complete invention formed in inventor mind. This mental act is inherently human. While artificial intelligence performs computations, courts distinguish computational processing from legal concept

TABLE II  
COMPARATIVE ANALYSIS OF ARTIFICIAL INTELLIGENCE INVENTORSHIP AND OWNERSHIP ACROSS JURISDICTIONS

Dimension	United States	United Kingdom	EPO	India
Inventor Definition	Natural person; conception is mental act by human (Thaler v. Vidal)	Natural person; Patents Act presumes human inventors (UK Supreme Court)	Natural person; EPC designates inventor as source of inventive thought (J 8/20)	Likely natural person; true and first inventor implies human agency
Statutory Basis	35 USC §101, §115; case law on conception	Patents Act 1977 §7, §13	EPC Art. 60(1), Rule 19; Guidelines	Patents Act 1970 §6, §2(1)(y)
AI as Inventor?	No. Requires Congressional action	No. Requires Parliamentary amendment	No. Requires EPC revision by States	No explicit guidance. Likely no
Ownership Route	Inventor or assignee. Gap if no human inventor	Inventor or successor. Ownership of AI insufficient	Inventor or successor. Gap if AI invents	True and first inventor or assignee. §6(b) employer ownership
AI-Assisted Guidance	USPTO 2024 & 2025: human must contribute significantly to conception	No formal guidance. Tool theory implicit	No AI-specific guidance. Natural person rule	No formal guidance
Disclosure	Inventor oath (§115). False statements risk invalidity	Statement of inventor (§13)	Designation (Rule 19)	Forms require names. False grounds for rejection
Policy Stance	Courts: for Congress. USPTO: guidance within existing law	Courts: for Parliament. Status quo	Board: interpretation limited. Reform needs consensus	No formal position
Impact	Document human contributions. Litigation risk	Uncertainty R&D	Harmonization limits flexibility	Uncertainty. No clear path for AI-generated

of conception implying consciousness, intent, and understanding.

3) *Incentive Theory*: Patent law incentivizes innovation by granting exclusive rights to inventors in exchange for disclosure. Artificial intelligence lacks motivation, cannot be incentivized by property rights, and does not respond to legal incentives. Recognizing artificial intelligence as inventor would sever link between patent grant and incentive.

4) *Legal Personhood*: Inventors must be capable of holding rights and entering legal relationships. Artificial intelligence lacks legal personhood in all studied jurisdictions. It cannot own property, contract, sue, or be sued. Without personhood, artificial intelligence cannot be inventor in legal sense.

### B. Ownership Theories

When artificial intelligence contributes significantly to invention, ownership questions become complex.

1) *Assignment from Human Inventor*: If human qualifies as inventor, standard assignment mechanisms apply. Human inventor can assign rights to employer, artificial intelligence developer, or other party. This approach maintains doctrinal consistency but depends on human making significant contributions.

2) *Employer Ownership*: Employment doctrines can vest ownership in employer when employee invents using artificial intelligence in employment course. This works if employee is

deemed inventor. If artificial intelligence autonomously generates invention with minimal employee contribution, employer ownership may not attach.

3) *Deeming Provisions*: Some scholars propose deeming provisions where person who owns, controls, or commissions artificial intelligence could be deemed inventor by statute, filling ownership gaps. However, this creates legal fiction.

4) *Sui Generis Rights*: Alternative is creating distinct protection category for artificial intelligence-generated inventions separate from traditional patents. Rights could vest in artificial intelligence owner or developer without requiring inventor designation.

### C. Practical Implications

1) *Filing Strategy*: Applicants using artificial intelligence face disclosure dilemmas. Fully disclosing artificial intelligence role might undermine inventorship claims. Understating artificial intelligence contributions risks inequitable conduct or later invalidity challenges. USPTO guidance attempts to provide safe harbors: applicants should document how human inventors contributed to conception.

2) *Examination and Litigation Risk*: Patent examiners must evaluate inventorship based on application disclosures. Artificial intelligence-assisted inventions may face heightened scrutiny. In litigation, defendants may challenge inventorship, seeking to invalidate patents by showing artificial intelligence, not named inventors, performed conception.

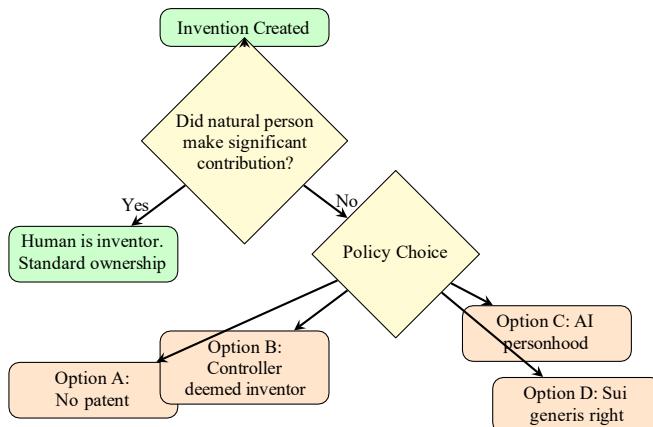


Fig. 3. Decision flowchart for inventorship and ownership determination under different policy options.

## VII. POLICY OPTIONS FRAMEWORK

Fig. 3 presents decision flowchart for inventorship and ownership determination.

### A. Option A: Status Quo

Maintain current doctrine: inventors must be natural persons, and artificial intelligence is characterized as tool. Artificial intelligence-assisted inventions are patentable if human made significant contributions to conception. Artificial intelligence-generated inventions without substantial human contribution are not patentable.

**Evaluation:** Preserves incentives for humans who use artificial intelligence as research tool but may reduce incentives to develop fully autonomous artificial intelligence inventors. Strong accountability as humans remain responsible. Relatively straightforward for patent offices though examiners face challenges evaluating artificial intelligence contributions. High harmonization potential as major jurisdictions already adopt this approach. Primary risk is leaving genuinely autonomous artificial intelligence-generated inventions unprotected.

### B. Option B: Deeming Provisions

Enact statutory provisions deeming human who owns, controls, trains, or prompts artificial intelligence system to be inventor of artificial intelligence outputs, subject to defined conditions.

**Evaluation:** Fills ownership gaps, ensuring artificial intelligence-generated inventions can be patented and incentivizing investment in artificial intelligence development. Moderate to strong accountability as deemed inventor bears legal responsibilities. However, deeming someone inventor who did not truly conceive creates legal fiction. Requires legislative amendment to define deeming conditions. Moderate harmonization potential as countries could adopt similar provisions through treaties.

### C. Option C: Limited Legal Personhood

Grant artificial intelligence systems limited legal personhood, enabling them to be named as inventors. Ownership

would vest in artificial intelligence owner or designated legal representative.

**Evaluation:** Could provide strong incentives by ensuring all artificial intelligence-generated inventions are protectable. Weak accountability as artificial intelligence cannot be held responsible. Enforcement would depend on holding artificial intelligence owner liable indirectly. Significant administrative burden requiring patent offices to establish artificial intelligence registration systems. Low harmonization potential as recognizing artificial intelligence personhood is profound legal change. Raises philosophical and ethical concerns about conferring rights on non-conscious entities.

### D. Option D: Sui Generis Rights

Create new category of intellectual property protection specifically for artificial intelligence-generated inventions, distinct from patents. Rights could have shorter terms, different disclosure requirements, and vest automatically in artificial intelligence owner.

**Evaluation:** Provides protection for artificial intelligence-generated inventions without distorting traditional patent doctrine. Moderate accountability as artificial intelligence owner holds *sui generis* right and can be held responsible for misuse. Requires new legislation and administrative infrastructure. However, simpler requirements might reduce examination burden. Difficult harmonization requiring international treaties to function effectively across borders. Primary risk is creating confusion and forum-shopping.

### E. Criteria-Based Comparison

Table III compares four options across key criteria.

Based on this evaluation, Options A and B appear most viable. Option A requires only guidance refinement while Option B could be implemented through targeted statutory amendments. Options C and D face significant feasibility and coordination challenges.

## VIII. INDIA-FOCUSED ANALYSIS

India has not yet confronted artificial intelligence inventorship litigation, but proactive engagement is essential given India's growing role in artificial intelligence research and development.

### A. Current Gaps in Indian Patent Law

1) *Ambiguity on AI as Inventor:* Patents Act, 1970 does not explicitly address whether inventors must be natural persons. While section 6 reference to true and first inventor likely presumes human inventors, absence of explicit statutory language or case law creates uncertainty.

2) *Ownership Challenges:* Section 6 allows patents to be granted to inventors or their assignees. If artificial intelligence generates invention autonomously, there is no human inventor from whom to derive title. Act does not provide deeming mechanism or *sui generis* route for such inventions.

TABLE III  
EVALUATION OF POLICY OPTIONS FOR ARTIFICIAL INTELLIGENCE INVENTORSHIP AND OWNERSHIP

Criterion	Option A (Status Quo)	Option B (Deeming)	Option C (AI Personhood)	Option D (Sui Generis)
Innovation Incentives	Moderate. Incentives for AI-assisted only	High. Fills gaps	High. All protectable	Moderate to High
Accountability	Strong. accountable	Humans	Moderate. Fiction may weaken integrity	Weak. Indirect via owner
Administrability	Moderate. guidance	Requires	Moderate. Needs conditions	Low. Infrastructure needed
Harmonization	High. Jurisdictions converging		Moderate. Treaty possible	Low. Consensus unlikely
Doctrinal Coherence	High. Maintains tradition		Moderate. Legal fiction strains doctrine	Low. Alters foundation
Abuse Risk	Moderate. contributions	Overstate	Moderate to High. Strategic claims	Moderate. Shell entities
				Moderate. Forum-shopping

3) *Disclosure and Ethical Concerns:* Application forms require applicants to state inventor names. If applicant using artificial intelligence names human with minimal contribution, this could constitute false information, grounds for rejection or revocation. Conversely, if applicant attempts to name artificial intelligence or leave inventor field incomplete, application would be rejected.

#### B. Comparative Lessons for India

1) *Adopt USPTO-Style Guidance:* India should issue administrative guidance clarifying inventorship for artificial intelligence-assisted inventions, modeled on USPTO guidance. Guidance should affirm inventors must be natural persons, clarify that use of artificial intelligence does not automatically disqualify person from inventorship, provide factors for evaluating significant human contribution to conception, and offer examples illustrating scenarios.

This guidance could be issued by Controller General of Patents through official notice or manual revision.

2) *Consider Legislative Amendment:* In medium term, India could enact deeming provision in Patents Act. For example, new sub-section under section 6 could state: Where invention is generated by artificial intelligence system, natural person who directed, trained, or controlled system for purpose of solving specific technical problem may be deemed inventor, provided that person made material contribution to development or deployment of system.

This provision would fill ownership gaps while maintaining human accountability.

3) *Enhance Disclosure Requirements:* India should consider requiring patent applicants to disclose use of artificial intelligence in inventive process. This could be implemented through checkbox or statement in application forms. Enhanced disclosure would assist examiners in evaluating inventorship and promote transparency.

#### C. Policy Considerations

1) *Balancing Innovation and Access:* India's patent policy historically emphasizes access to essential goods and

preventing evergreening. Policymakers must ensure reforms addressing artificial intelligence inventorship do not undermine these goals. Patent offices should rigorously apply patentability criteria regardless of artificial intelligence involvement.

2) *International Coordination:* India is signatory to TRIPS Agreement and engages in WIPO forums. Any Indian reforms should consider international trends to facilitate cross-border filing and enforcement. Aligning with USPTO-style guidance promotes harmonization without requiring treaty amendments.

3) *Capacity Building:* Examiners will need training to evaluate artificial intelligence-assisted inventions. India's Patent Office should invest in examiner education on artificial intelligence technologies, conception analysis, and disclosure review.

#### D. Proposed Roadmap

- 1) **Short-term (1-2 years):** Issue administrative guidance on artificial intelligence-assisted inventions, clarifying inventorship standards and providing examples
- 2) **Medium-term (3-5 years):** Introduce legislative amendment adding deeming provisions for artificial intelligence-generated inventions. Enhance disclosure requirements in application forms
- 3) **Long-term (5+ years):** Evaluate effectiveness of deeming provisions and consider whether sui generis rights or other mechanisms are needed. Engage in international coordination efforts through WIPO
- 4) **Ongoing:** Conduct training for examiners, establish stakeholder consultation processes, and monitor case law developments globally

#### IX. CONCLUSION AND FUTURE RESEARCH

This research examined collision between artificial intelligence and patent law through comparative analysis of DABUS litigation and related guidance in US, UK, EPO, and implications for India. Findings reveal global consensus that inventors must be natural persons, grounded in statutory language, doctrinal coherence, and policy rationales including incentive

theory and accountability. However, this consensus leaves unresolved question of how to address artificial intelligence-generated inventions where human contribution is minimal or absent.

An ownership gap exists: without human inventor, standard assignment mechanisms fail, and such inventions may go unprotected. This gap creates perverse incentives to characterize artificial intelligence contributions dishonestly or to withhold artificial intelligence-generated inventions as trade secrets.

Four policy options are available: maintaining status quo with refined guidance, enacting deeming provisions, granting artificial intelligence limited legal personhood, or creating *sui generis* rights. Evaluation suggests Options A and B are most viable. Option A aligns with current international trends and requires minimal legislative change. Option B fills ownership gaps while preserving human accountability, though it introduces legal fiction.

For India, we recommend issuing administrative guidance in near term, followed by consideration of deeming provisions through legislative amendment. Enhanced disclosure requirements and examiner training will support consistent application. India's approach should balance promoting artificial intelligence innovation with safeguarding access to essential inventions and preventing strategic manipulation.

#### A. Future Research Directions

Several areas warrant further investigation:

1) *Empirical Studies*: Empirical research is needed on prevalence of artificial intelligence-assisted and artificial intelligence-generated inventions in patent filings. Surveys of inventors and patent attorneys could reveal how artificial intelligence is currently used and how applicants navigate disclosure dilemmas. Analysis of patent data could identify trends in artificial intelligence-related filings.

2) *Economic Modeling*: Economic models could assess incentive effects of different policy options. Would deeming provisions increase artificial intelligence research and development investment? Would lack of protection for artificial intelligence-generated inventions drive such inventions into secrecy?

3) *Comparative Analysis*: This research focused on US, UK, EPO, and India. Future work could examine artificial intelligence inventorship approaches in other major patent jurisdictions such as Japan, China, and South Korea.

4) *Intersection with Other IP Rights*: Artificial intelligence-generated works raise similar issues for copyright (authorship) and design rights. Comparative analysis across intellectual property regimes could identify common principles and divergent approaches.

5) *Ethical and Philosophical Dimensions*: Deeper philosophical analysis of artificial intelligence creativity, consciousness, and moral status could inform debates about artificial intelligence personhood. Ethical analysis of artificial intelligence role in knowledge production would enrich policy discussions.

#### B. Concluding Remarks

Patent law stands at inflection point. Artificial intelligence challenges assumptions embedded in centuries of legal doc-

trine. DABUS litigation has clarified that under current law, artificial intelligence cannot be inventor. Yet this clarity leaves deeper questions unresolved: how should legal systems allocate ownership of artificial intelligence-generated inventions, incentivize innovation, and maintain accountability?

Different jurisdictions may adopt different approaches based on their legal traditions, economic priorities, and policy values. What is essential is that reforms be made thoughtfully, with attention to doctrinal coherence, practical administrability, and international coordination. Framework and analysis presented aim to support policymakers, patent offices, and stakeholders in navigating these complex choices.

As artificial intelligence capabilities continue to advance, patent law must evolve—not by abandoning foundational principles, but by adapting them to new technological realities. Challenge is to preserve patent system core functions—rewarding innovation and promoting disclosure—while accommodating future in which invention is no longer exclusively human endeavor.

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