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Outcome Document on the ISAIL Joint Committee Session on the Draft Computer-Related Inventions Guidelines by the Indian Patent Office (April 5, 2025)

The AI Development Committee and the Policy Innovation Committee of ISAIL.IN hosted a Joint Committee session to discuss the features of the draft Computer-Related Inventions Guidelines by the Indian Patent Office on April 5, 2025. This document constitutes comments by the Indian Society of Artificial Intelligence and Law as an outcome of the session held on April 5.

Incumbent Members of the Committee Sessions

- **Kailash Chauhan** (Chairperson, AI Development Committee, Indian Society of Artificial Intelligence and Law)
- **Ayush Chandra** (Chairperson, Policy Innovation Committee, Indian Society of Artificial Intelligence and Law)
- **Bogdan Grigorescu** (Vice-President, Advisory Council, Indian Society of Artificial Intelligence and Law)
- **Abhivardhan** (President, Indian Society of Artificial Intelligence and Law)

Discussion Points for the Committee Session

The discussion focused on the following points broadly:

- **Technical Effect in AI and ML:**
 - Definition and examples of “technical effect” in AI/ML contexts.
 - Demonstrating technical solutions to technical problems in AI/ML inventions.
 - Analysis of guideline examples, such as the CNN for traffic sign detection.
- **Patentability of Algorithms:**
 - Conditions under which algorithms can be patented in AI/ML systems.
 - Distinction between purely instructional algorithms and those with technical effects.
 - Influence of recent case laws on algorithm patentability.

- How these cases shape the interpretation of Section 3(k) for AI/ML inventions.
- **Disclosure for Reinforcement Learning:**
 - Specific description of agent interactions, states, actions, and rewards.
- **Analysis of Example Claims:**
 - Examination of patentable examples involving AI/ML, such as Example 7.
 - Understanding why certain claims are patentable while others are not.

The comments are compiled and drafted by Kailash Chauhan, Chairperson of the AI Development Committee, ISAIL.IN with special inputs on Natural Language Processing by Abhivardhan, President, Indian Society of Artificial Intelligence and Law (ISAIL.IN).

Key Observations and Concerns

- **Close-ended Feedback on Specific Parts of the Guidelines**

1. Algorithm

The definition of Algorithm is taken from the judgement of Hon'ble Madras High Court of Microsoft Technology Licensing LLC vs Assistant Controller of Patents and Design. At Para 25 it states as follows:

"...An algorithm may be defined as a set of rules or instructions for solving a problem, typically through a sequence of steps or operations. Devising an algorithm would also, therefore, be an intellectual exercise and intellectual property protection would be limited to copyright protection, subject to originality, for the form of expression. While the expression is commonly used in the context of software-based routines in computers, as is evident from the above, it can be used in other contexts..."

Incorporation of definitions would make it easier for the patent office to understand and examine the applications. However, the definition may be broadened to give recognition to Fortier technologies like AI and Machine Learning (ML).

2. Secure System

The term "Secure system" is taken from the Information Technology Act, 2000 (No. 21 of 2000) which is defined as follows:

"Secure system means computer hardware, software, and procedure that- (a) are reasonably secure from unauthorised access and misuse; (b) provide a reasonable

level of reliability and correct operation; (c) are reasonably suited to performing the intended functions; and (d) adhere to generally accepted security procedures;”

The incorporation of this definition mandates that a secure system should be reliable and is protected against unauthorized access.

However, the definition may include terms such as “system that provides protection for hardware/software, or data against unauthorized access, destruction or modification and includes mechanisms for access control, monitoring, authentication and other security functions. The inclusion of these terms would strengthen the definition.

3. Definition of AI may also be included

There has been a substantial increase in AI-related applications in India. Therefore, inclusion of a definition of AI would be helpful for the applicants. Terms such as vector machines, k-means, kernel regression, and discriminant analysis may also be defined/explained under the AI definition for greater clarity. The reference may be taken from the EPO Guidelines for Examination, which is as follows:

“Artificial intelligence and machine learning are based on computational models and algorithms for classification, clustering, regression and dimensionality reduction, such as neural networks, genetic algorithms, support vector machines, k-means, kernel regression and discriminant analysis. Such computational models and algorithms are per se of an abstract mathematical nature, irrespective of whether they can be “trained” based on training data. Hence, the guidance provided in G-II, 3.3 generally applies also to such computational models and algorithms” (Guidelines for Examination in the EPO, Chapter G-II, 3.3.1).

4. Delay In The Updating Of The Draft Guidelines

The draft has taken 8 years to amend the guidelines, which may be prejudice to the development of computer-related inventions. There has been a substantial development in the CRI, especially in the large language models (LLM) and generative AI. Suppose, the next CRI amendment should take place after eight years, The Guidelines would miss a while time of AI and other frontier technology development period. The development of the CRI takes place rapidly, therefore, it requires a periodic review of the Guidelines. European Patent Office (EPO) publishes an updated set of Guidelines every year and makes necessary amendments according to the needs of the developing technologies in CII. For example, In 2025 updated guidelines the EPO has made substantial changes in the AI patentability.

5.No Formal Definition Of Technical Effect

The Draft CRI Guidelines 2025, represents a significant shift from previous iterations and incorporates the various definitions and methods of innovation (7-step “Seven Stambhas Approach”) and inventive steps (5-step analysis approach) from various judgements. This approach aims to align patent examination with court interpretations and may raise concerns about long-term clarity and consistency in India's patent regime.

The judicial definitions are inherently unstable and subject to change. The Court interpretations evolve over time according to new cases that present new facts and contexts. Therefore, this introduces significant uncertainty in patentability, particularly in the rapidly evolving field of computer technologies.

Guidelines should incorporate definitional authority from legislative sources rather than judicial pronouncements.

- **Open-ended Feedback**

1. Non consideration of emerging technologies like AI, and ML in the CRI guidelines. Impact ON AI of 2025 Guidelines.

The draft Guidelines for 2025 have formally acknowledged artificial intelligence (AI), machine learning (ML), blockchain, and quantum computing as domains of innovation eligible for patent protection under the Act. However, the grant of patent rights remains contingent upon the demonstration of a technical effect by the invention. There are several reasons that suggest the need for a specific approach to emerging technologies like AI to reflect a balanced yet forward-thinking perspective.

A report published in April 2023 indicates that over 50% of emerging technology patents filed in India during the past decade were related to the domain of emerging technologies like the Internet of Things (IoT) or AI.¹ Over 2010-2022, patents related to AI and IoT related to applications related to smart automation having use in various sectors have seen a substantial increase in the number of patent applications.

The rapid proliferation of software-driven technological advancements necessitates the creation of a sustainable intellectual property ecosystem in the country. This may require a specific approach for AI-related patents for patent application eligibility for patentability.

¹ <https://nasscom.in/knowledge-center/publications/india-patents-report-innovations-india-transcending-barriers>

There are several reasons that may act as a barrier to demonstrating the disclosure and inventive step in AI-related patents.

The recognition of emerging technologies such as AI, ML, blockchain, quantum computing, and cybersecurity in the 2025 draft Guidelines underscores a deliberate and progressive stance toward fostering innovation in these fields. However, such recognition may not be sufficient for the abovementioned issues w.r.t the AI related patent applications.

The EU in the 2025 guidelines also includes that the use of AI/ML computational models does not inherently exclude inventions from patentability under the EPC. It reads as follows:

'if a claim of an invention related to artificial intelligence or machine learning is directed either to a method involving the use of technical means (e.g. a computer) or to a device, its subject-matter has technical character as a whole and is thus not excluded from patentability under Art. 52(2) or (3). In such cases, the computational models and algorithms themselves contribute to the technical character of the invention if they contribute to a technical solution to a technical problem, for example by being applied in a field of technology and/or by being adapted to a specific technical implementation.'

The EU 2025 Guidelines have also generalised the AI definition by removing specific references such as "classification, clustering, regression and dimensionality reduction". This reflects the specific need for AI-related invention patentability and its scope for the development of AI-related technology.

Therefore, to take care of these challenges, a "problem-solution" approach may be adopted.

Recommendation: Formalize this approach with specific guidance for examiners by:

1. Developing a structured framework for identifying the technical problem solved by an AI invention
2. Establishing criteria for evaluating whether the AI solution transcends abstract mathematical concepts
3. Providing clear examples of eligible vs. ineligible AI solutions under this approach
4. Creating a differentiated evaluation methodology for various AI application domains (e.g., industrial, medical, financial)

Why are such guidelines for AI-related inventions important for the AI Sector development in India?

Apart from the above-mentioned issues of AI patentability, there are other factors that require the encouragement of AI-related patents in India. As we know IP promotes innovation by providing ways to commercialise the innovation through various ways like selling the IP to others, licensing the patent rights and by getting exclusive rights to use the technology for 20 years. This helps the investor to recover their money spending in the R&D. This further encourages capital investment in this sector.

AI mission (NAIM), also known as the IndiaAI Mission was launched in 2024 and identifies species factors for success in the AI race. These factors include seven elements such as computing/AI infrastructure, capital, algorithms data, talent, R&D, and applications. Therefore, encouraging the IP creation would promote such important missions for the country.

Research shows that R&D Spending on AI (and innovation in general) by India's Private and Public Sectors is very low as compared to the US. As of 2020, the U.S. government funded approximately 20% of the nation's total R&D activities, with private industry contributing around 70%.² While, India's private sector accounted for only 36.4% of the country's gross expenditure on R&D during the same period. The recommendation would promote the spending in R&D by the private sector.

Absence of other tools for IPR protection.

In other countries, apart from patents, there are other options to protect patents. For example, some jurisdictions have "utility patents" that protect the invention. If the invention is not eligible for patentability, there are no other provisions under which it can be protected.

Recommendation: The Guidelines should acknowledge this gap and propose:

1. Interim protection mechanisms for AI innovations that may not meet full patentability criteria
2. Special provisions for protecting AI training methodologies and models
3. Recognition of technical implementations that may fall short of patent eligibility but still deserve some form of protection
4. Guidance for applicants on strategic approaches to protecting different aspects of AI innovations

² <https://carnegieendowment.org/research/2025/02/the-missing-pieces-in-indias-ai-puzzle-talent-data-and-randd?lang=en>

Sufficiency of Disclosure and Enablement Requirements

A key feature of the 2025 draft guidelines is the inclusion of illustrative examples i.e. 10 examples of patentable CRI inventions and 10 examples of non-patentable CRI inventions. This would guide the applicants as well as the examiners in assessing patentability under Section 3(k) of the Patents Act, 1970.

However, these examples may not be very useful for AI-related inventions. In AI-related inventions, it is challenging to explain the disclosure/enablement, as sometimes the functions of AI are not even possible to explain. (Black box paradox). Therefore, when a CRI related to AI would be under the question of enablement, it may require a different approach to address the issue.

Therefore, in AI and ML-related inventions, the requirement for enablement and disclosure is another complex requirement that is challenging to comply with because of the complex nature of the technology, separate eligibility may be prescribed. This would prevent the enablement and disclosure from becoming a technical barrier to patentability. It would help to overcome section 10(4) requirements.

Recommendation: Develop specialized enablement standards for AI applications that:

1. Recognize the inherent opacity of certain AI systems while ensuring adequate disclosure
2. Focus on reproducibility of results rather than exhaustive explanation of internal processes
3. Allow for alternative demonstration methods such as:
4. Performance benchmarks against established baselines
5. Statistical validation protocols
6. Empirical demonstration of capability
7. Documentation of training methodologies and datasets (with appropriate privacy safeguards)

Background on Amazon's US Patent 11978437 for "Natural Language Processing"

US Patent 11978437, granted to Amazon, introduces an innovative approach to natural language processing that enables personalized concept learning through interactive teaching sessions. The patent describes a system that can identify unrecognized "slot data" in user commands and learn their meaning through direct user interaction.

Key technical innovations in this patent include:

- A concept parser component that automatically identifies which parts of user utterances are not understood by the system
- An answer understanding component that conducts interactive teaching sessions with users
- Re-use capabilities that apply previously-learned concepts across different contexts
- A validation system that ensures learned concepts are correctly implemented

Unlike traditional machine learning approaches that require large datasets to gradually learn patterns, Amazon's patent enables immediate learning and application of personalized concepts through structured dialog. For example, when a user says "set the family light to John's movie mode," the system identifies the unknown concept ("John's movie mode"), initiates a teaching dialogue, and immediately applies the learned concept for future use. In accordance with the observed gaps in the current draft guidelines, the following NLP-specific recommendations are proposed for inclusion:

1. Expanded Definition of Algorithm for NLP Applications

While the draft guidelines include a definition of "Algorithm" from the Microsoft Technology Licensing LLC judgment, this definition should be expanded specifically for NLP technologies to include:

"In natural language processing applications, algorithms may include technical implementations that transform unstructured linguistic inputs into structured, machine-actionable commands through specialized technical processing steps including but not limited to entity recognition, slot filling, contextual understanding, and interactive learning mechanisms."

2. Technical Effect Criteria for Interactive NLP Systems

The guidelines lack a formal definition of "Technical Effect" as noted in the uploaded document. For NLP systems, specific technical effect criteria should include:

"Natural language processing systems demonstrate technical effect when they implement mechanisms that:

- Transform non-actionable language inputs into actionable commands
- Enable persistent storage and retrieval of personalized linguistic concepts
- Implement cross-domain application of learned concepts

- Provide technical solutions to the problem of context-dependent language understanding”

3. NLP-Specific Implementation Standards

Following the “Seven Stambhas Approach” mentioned in the uploaded document, NLP implementations should be evaluated based on:

“Natural language processing implementations that combine multiple technical components (such as concept parsers, answer understanding components, and validation systems) to solve specific technical problems in language understanding should be recognized as technical implementations rather than abstract mathematical concepts, particularly when they demonstrate measurable improvements in system functionality.”

4. Enablement Requirements for Interactive Learning Systems

To address the “Black box paradox” mentioned in the uploaded document:

“For interactive natural language processing systems that learn through user dialogue, enablement requirements under Section 10(4) may be satisfied through:

- *Detailed disclosure of the dialog management architecture*
- *Explanation of the slot identification and resolution mechanisms*
- *Documentation of the persistent storage implementation for learned concepts*
- *Description of validation procedures that ensure proper implementation”*

5. Problem-Solution Approach for NLP Inventions

As suggested in the uploaded document regarding AI patentability:

“When applying the problem-solution approach to NLP inventions, examiners should consider:

- *Whether the invention solves the technical problem of converting non-actionable language to actionable commands*
- *How the implementation addresses the technical challenge of personalized language understanding*
- *Whether the solution provides technical improvements over existing NLP systems in terms of efficiency, accuracy, or functionality”*

6. Cross-Domain Knowledge Application as Technical Contribution

“Natural language processing systems that demonstrate the ability to apply learned concepts across different domains (such as applying location understanding from navigation contexts to weather contexts) should be recognized as demonstrating technical character and effect, as such capabilities represent technical solutions to the technical problem of domain-specific language understanding.”

7. Illustrative Examples of Patentable NLP Implementations

In addition to the existing examples mentioned in the draft, specific NLP examples should be added:

“Example of patentable NLP implementation: A natural language processing system that identifies unrecognized terminology in user commands, initiates a structured teaching dialogue to learn the meaning of this terminology, stores this information in a persistent knowledge base, and applies the learned concepts across different application contexts.” 

Video Links (If any)

Session: <https://youtu.be/MZmJLW-gPKQ>