AI Tools
for KIPO's IP Administration

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WIPO ICT Leadership Dialogue (WILD)
Theme 7: AI tools for IP businesses
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Property Office

KIPO's IT system: KIPOnet

Fully digitized all IP administrative processes, including filing, formality checks, examination, registration, trials and appeals, and gazette publication.

1999   **2005**   **2012**   **2019~2021**

▸ Paperless   ▸ 24/7 Non-stop services   ▸ Cloud-based system   ▸ Start applying AI

▸ E-Filing   ▸ Work-from-home system

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AI System Overview (1)

Application → Formality Examination → Substantive Examination → Trials and Appeals

AI Classification for **Patent, Trademark**

AI Formality Checks

AI **Patent**
Prior art search,
Machine Translation,
Drawing Reference
Number Annotator

Trademark, Design
Image Search

AI Formality Checks

AI Customer service (chatbot)

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AI System Overview (2)

Search
- AI-based Patent Search ('22)
- Trademark Image Search ('21) • Design Image Search ('21)

Classification
- AI Patent CPC Classification ('22)
- AI Trademark Goods & Services Classification ('24)

Machine Translation
- English ('19) • Japanese ('22) • Chinese ('20)
- French, German, Russian ('20)

Chatbot
- Chatbot Service for Call Center Agents ('21) • Chatbot Service for the Public ('22)

Others
- Patent Drawing Reference Number Annotator ('19)
- AI-based Trial Formality Examination System ('24)

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Key AI Services

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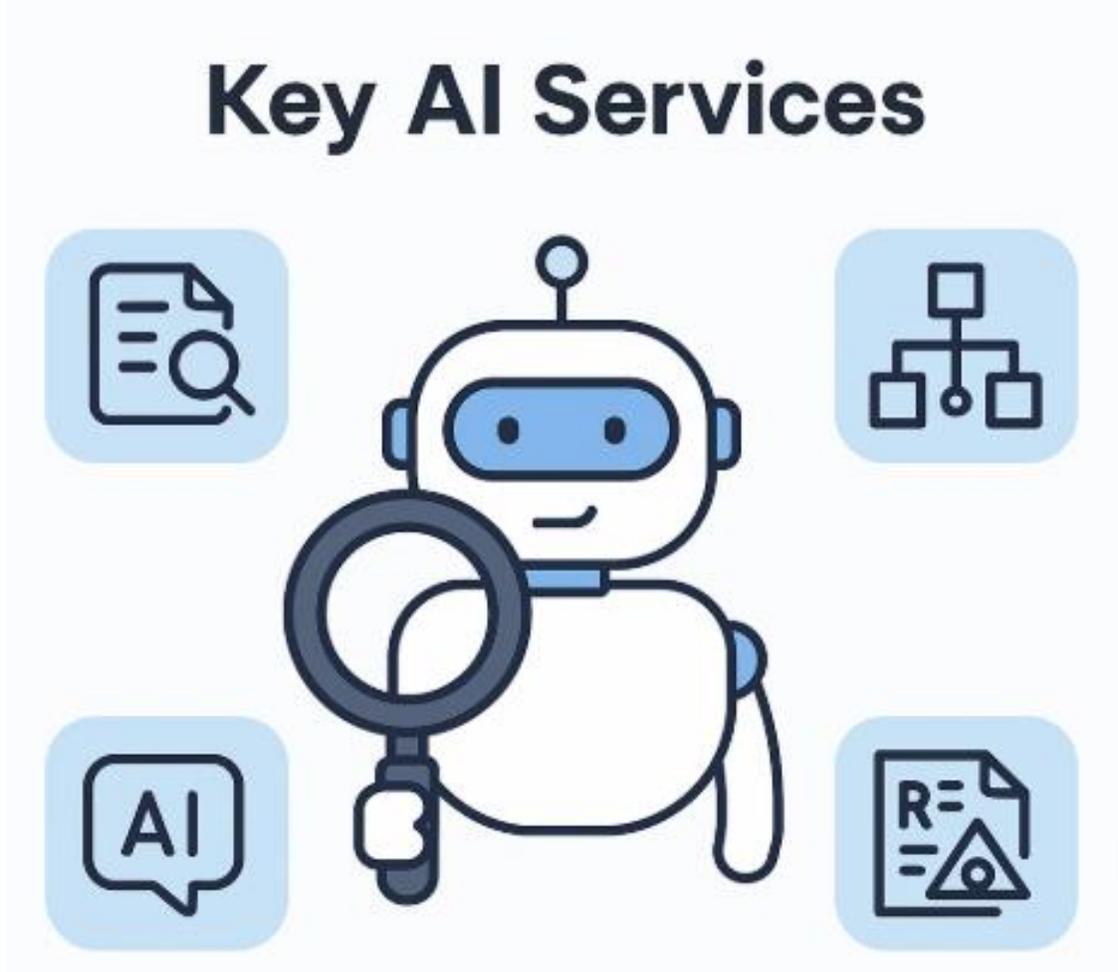
AI based Patent Search System

❖ Extract keywords & key-phrases from patent application documents

❖ Compare embeddings and find similar patent documents

❖ Display them in a list, starting from the most relevant ones.
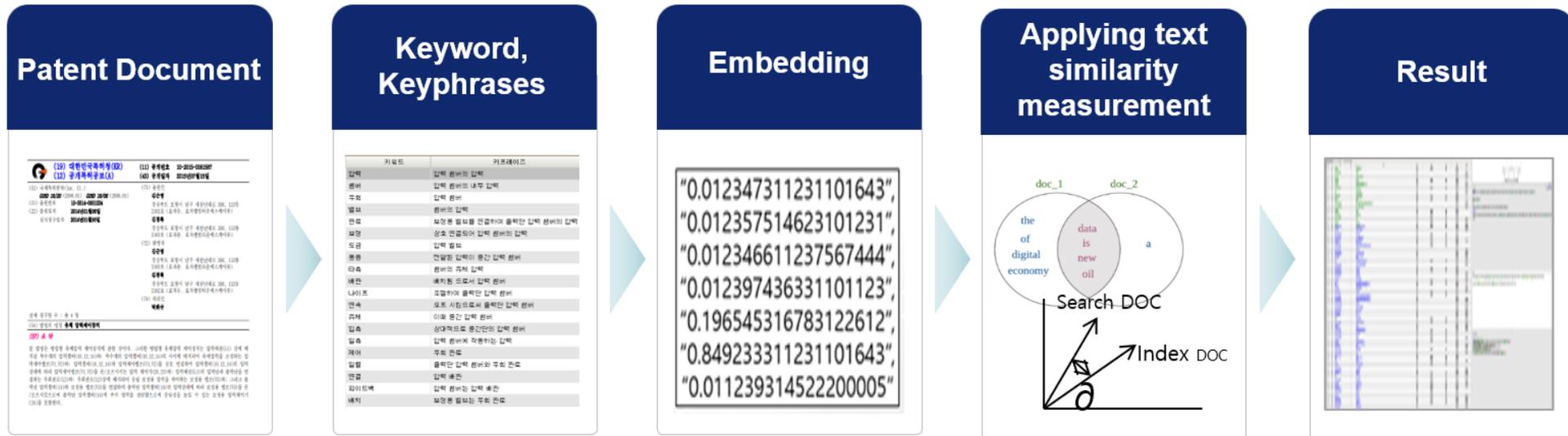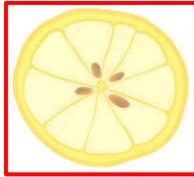
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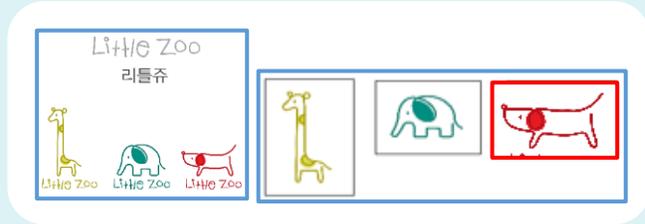
Trademark Image Search System

Trademark Image Search System
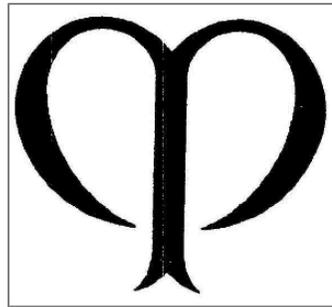
40-0464245

whole vs whole →

whole vs part →

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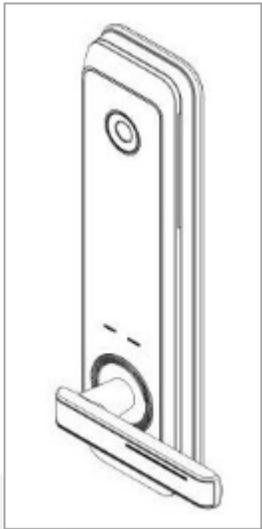
Design Image Search System

whole vs whole

part vs part

30-1004255

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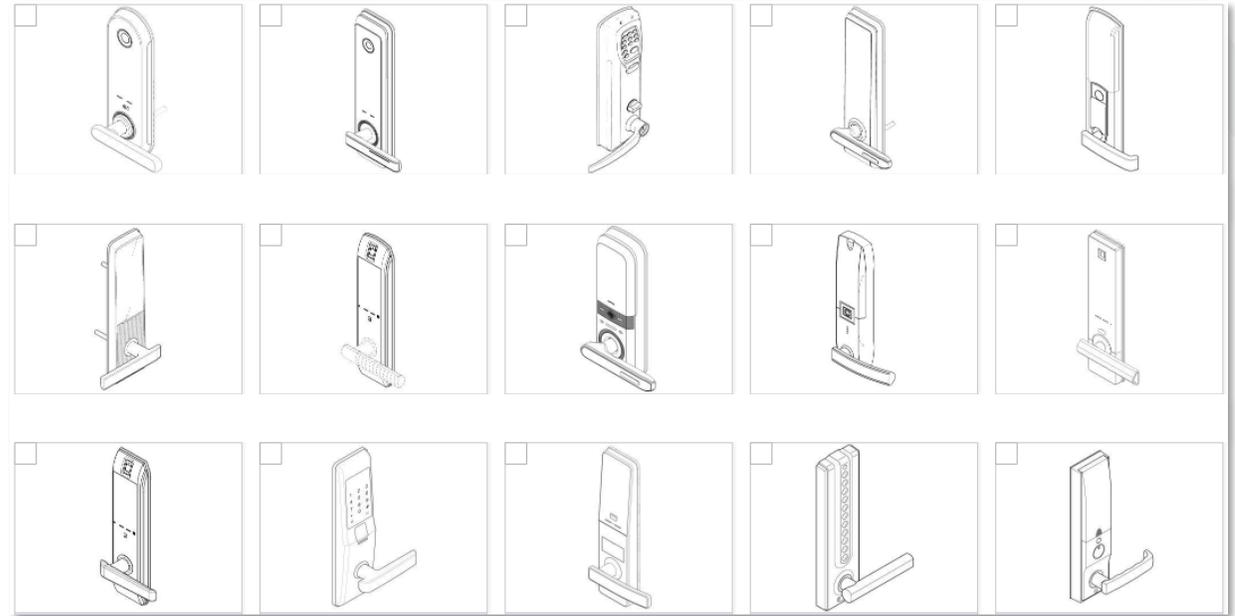
Design Image Search System

30-0661535

whole vs whole

*(2D Design,
Figurative Mark Image Search)*

part vs part

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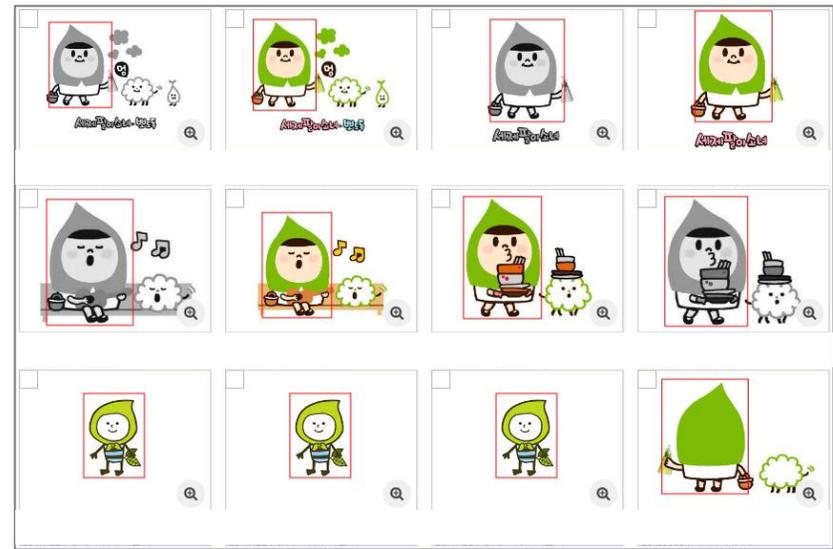
Machine Translation

❖ Used for two purposes: (1) real-time translation and (2) large-scale translation to support a Korean-based patent search system.

❖ Developed and operated through various approaches, including:

    ✓ Building in-house translation engines

    ✓ Buying commercial translation engines

    ✓ Utilizing external engines through Open-API

    ✓ Adopting WIPO's translation engines

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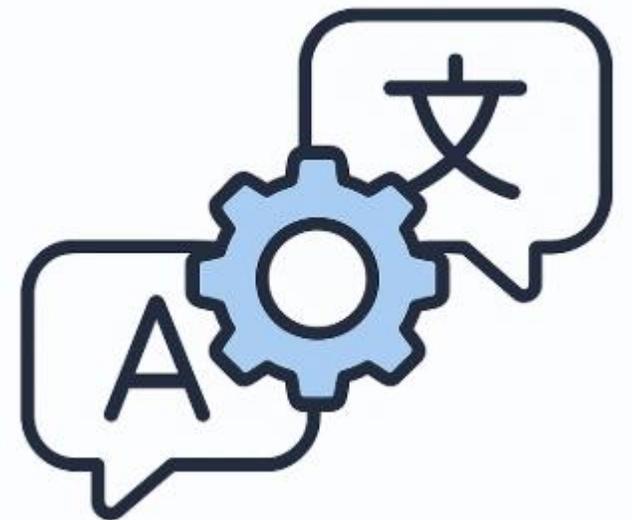
Rule-based
Application Formality Checking System

❖ Formality examiners review the result of the system and conduct more checks which are not covered by the system.

Results of formality check by machine
- Applications to accept
- Applications to revise
- Applications to reject

Formality check of patent application

1. whether the fee is paid?

2. whether applicant's information is right?

3. whether agent's information is accurate?

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Deep Learning based
# Trial Formality Examination System

Reclassification of attached documents using AI OCR

- Automatic reclassification of attachments using AI OCR
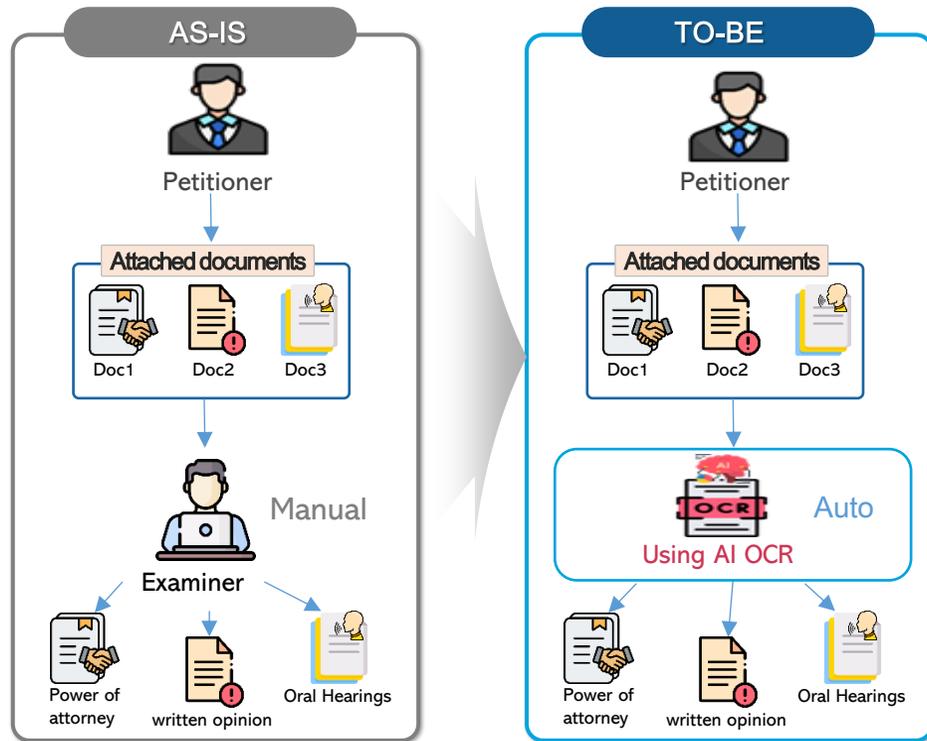
Establishment of an automated computerized exam system

- Content extraction from image attachments using AI OCR
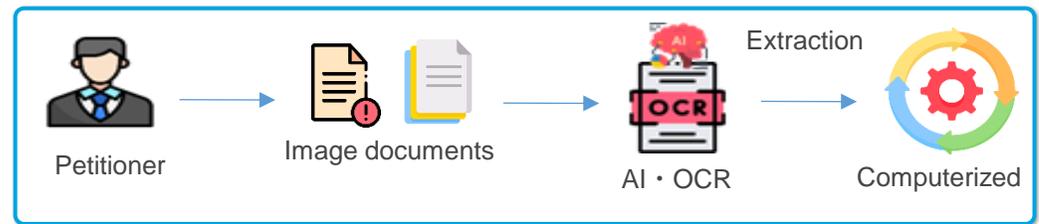
- Apply extracted content to a computerized system

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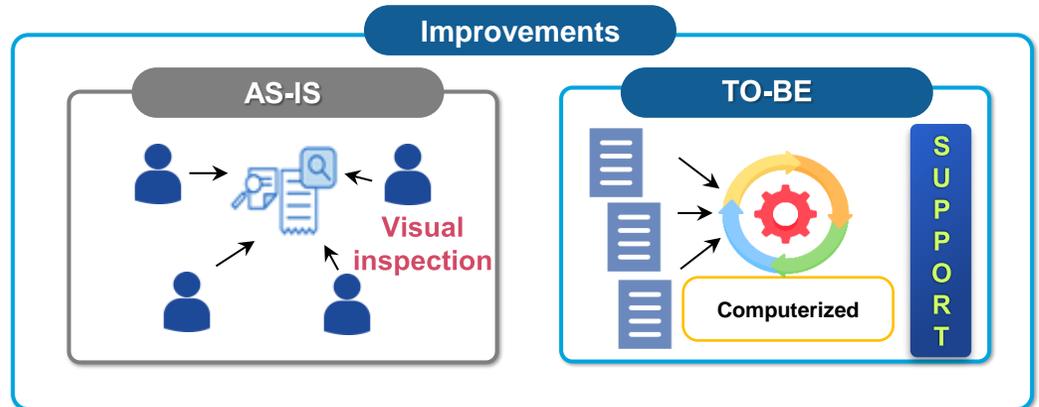
AI Language Model

❖ Efforts are underway to assess the usefulness of AI language models

    ✓ Cooperating with private companies to build

      Patent-specific LLM, Chatbot for patent examiners

    ✓ Exploring the effectiveness of private companies'

      language models for examination

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# *Final thoughts*

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Things to consider for AI

■ AI is not a goal in itself, but rather a tool to enhance the efficiency of IP office administration

  ▸ Evaluation of necessity through cost/benefit is needed

■ Operating IT systems require substantial costs.

  ▸ AI systems incur additional costs (e.g., GPU, AI expert)

■ Therefore, IP offices need to assess necessity, usability, and potential benefits of AI

  ▸ IP administration needs efficient tools. In the long run, using AI will be an inevitable path.

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Thank you!

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