



**CNIPA**

China National Intellectual Property Administration

# Leveraging AI to Empower Patent Examination and Search

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New Technologies

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AI-Powered Patent  
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Generative AI

PART  
01

# CNIPA's Exploration of New Technologies

Patent e-Filing

2004

2010

- Digitalization of Examination and Search
- Machine Translation

Auto-Classification  
(IPC subclass)

2011

2013

Intelligent Search  
Report for Utility Model

PART  
01

# CNIPA's Exploration of New Technologies



PART  
01

# CNIPA's Exploration of New Technologies

## China Patent Intelligent Examination System (i System)

- Invention, Utility Model, Design, PCT, Hague, etc.
- Full patent lifecycle

2021

2023

.....

## China Patent Intelligent Search System

- Semantic Search
- Combined Search
- Machine Translation

... ..

PART  
**01**

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CNIPA's Exploration of  
New Technologies

PART  
**02**

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AI-Powered Patent  
Operations in  
CNIPA

PART  
**03**

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Opportunities and  
Challenges of  
Generative AI

**Applicants**

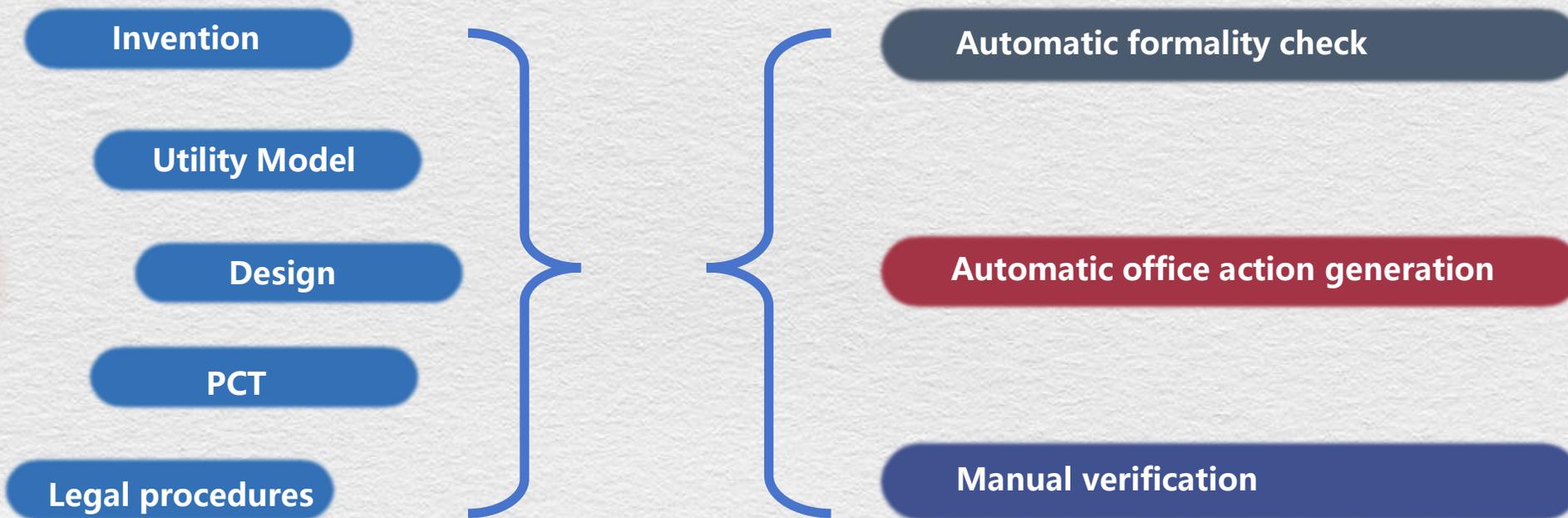
- Bibliographic Data
- Description
- Drawings
- Claims
- Abstract
- Abstract Fig
- .....

**Interactive  
e-Filing  
Platform**

**Interactions**

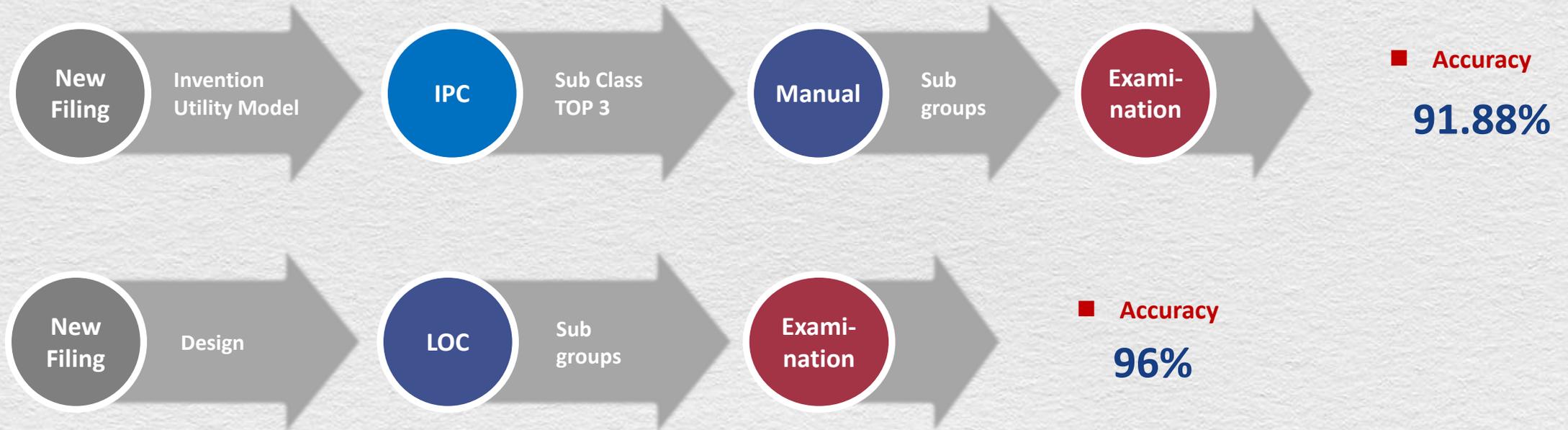
- Filling forms online
- Editing online
- Automated notification
- Automated verification

Intelligent preliminary examination



PART  
**02**

**2.3**  
**Automatic Classification**



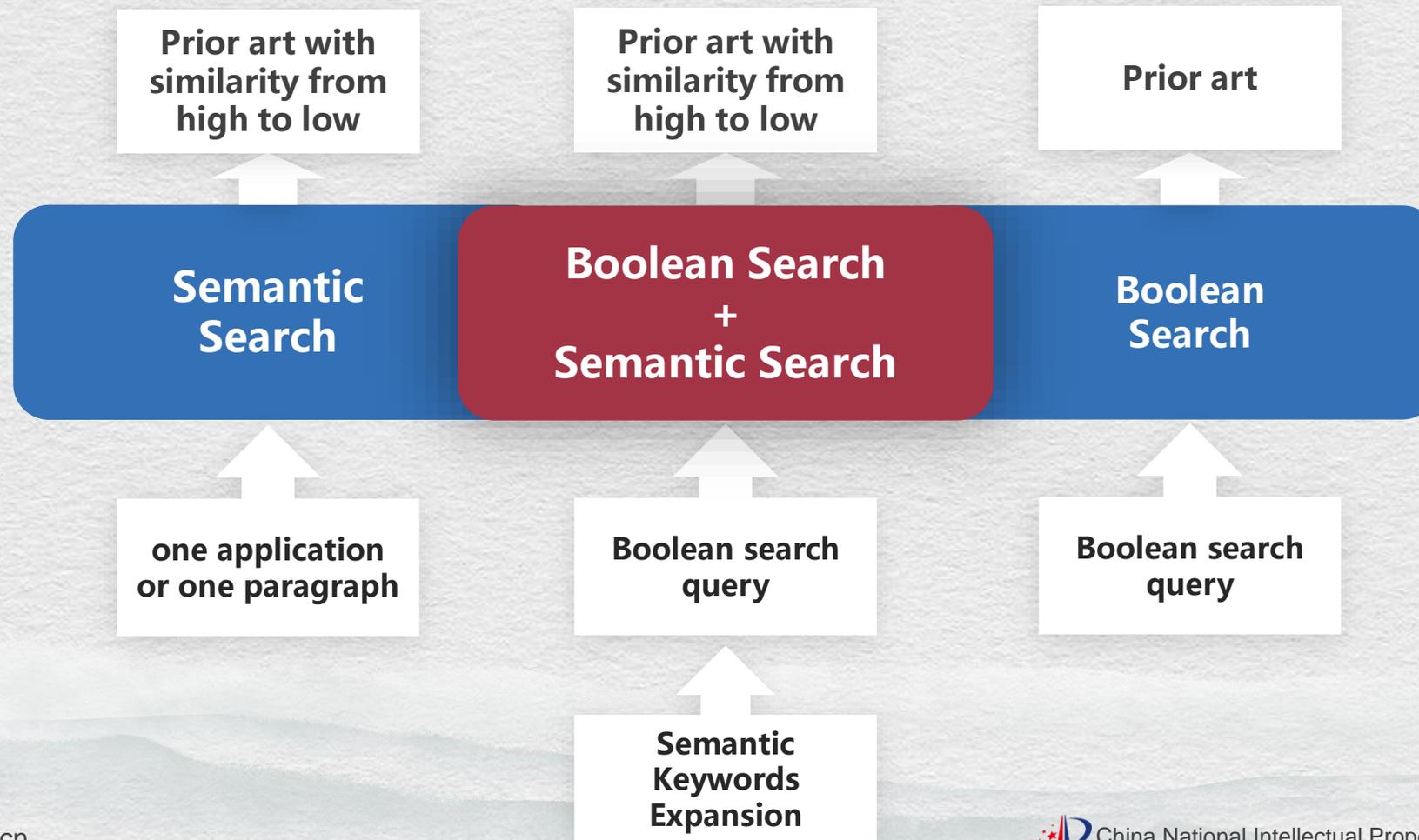
Non-Patent Literature (NPL)  
Search

Semantic and Boolean  
Combined Search

AI  
Big Data  
Cloud

Machine Translation

Semantic Keywords  
Expansion



In comparison to  
the previous search system

Omission Ratio

National filings: **31.6%**↓

PCT filings: **25%**↓

Performance

Searching: **50%**↑

Browsing: **90%**↑

### Data

- Extensive coverage: countries, organizations & institutions
- Total volume:  
**about 13 million items**

### Features

- Multi-view search
- Partial search
- Line drawing search

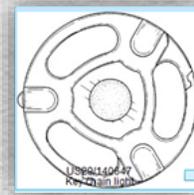
# PART 02 | 2.5 Image Search



Background color modified



Partially similar



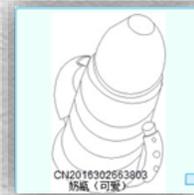
Shadow removed



Resolution reduced



**90% of the referenced prior art in the top 30 search results**



Color drawing linearized



Marker added

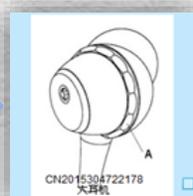
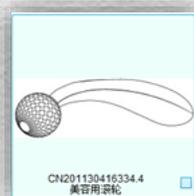
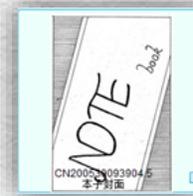
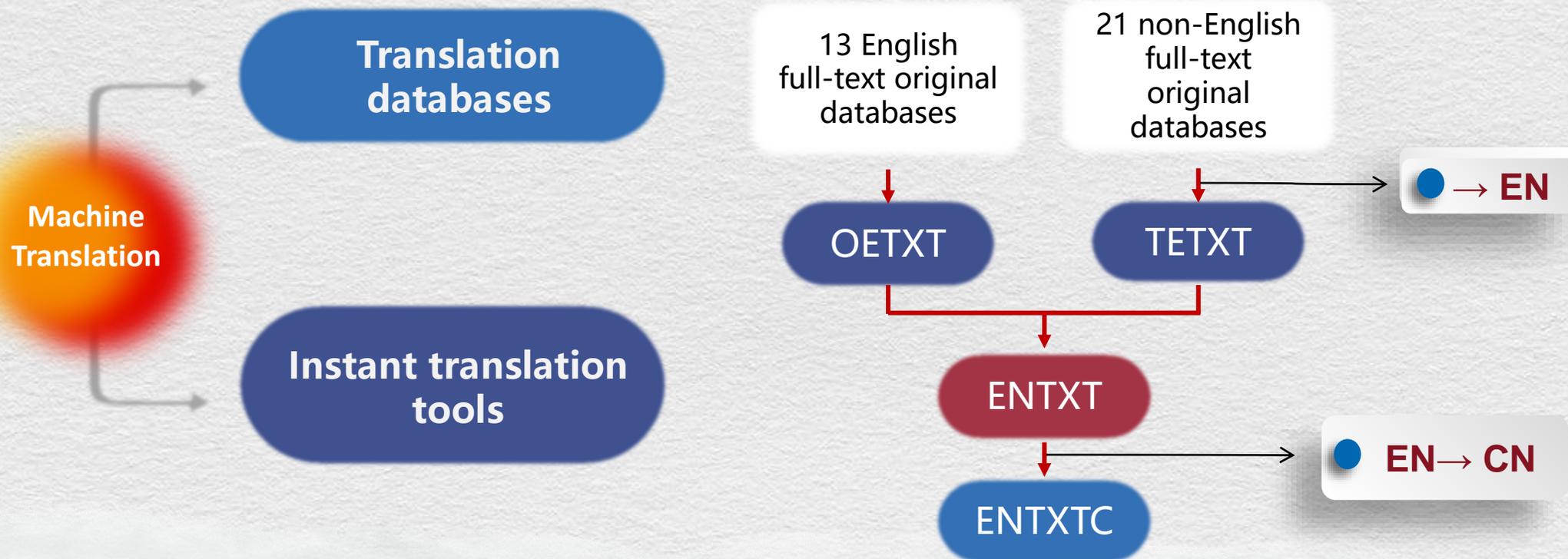


Image rotated



Structural similar application





## Intelligent Auxiliary Substantial Examination

### Intelligent Auxiliary Tools

- Internet evidence platform
- Feature comparison
- Notification validation
- Notification assisted writing
- ... ..

- Digitalized file browsing and editing
- Formality error detection
- Multi-language online translation
- ... ..



Reduce the routine  
and repetitive work



Focus on the core work

PART | 2.8  
**02** | Measured effectiveness

**1.045 million**  
inventions were authorized

**67 thousand**  
patent reexamination and invalidation  
cases were concluded

**2024**

Invention examination period was  
reduced to **15.5 months**

Accuracy rate of case closure has  
increased to **95.2%**

PART  
**01**

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CNIPA's Exploration of  
New Technologies

PART  
**02**

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AI-Powered Patent  
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**03**

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Opportunities and  
Challenges of  
Generative AI

# Opportunities and Challenges of Generative AI

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## Research & Deployment

- Deepening semantic comprehension capabilities
- Enhancing prior art search efficiency and accuracy
- Assisting in inventive step assessment
- Generating office actions and notifications
- ... ..

PART  
**03**

# Opportunities and Challenges of Generative AI



## Challenges

- **Strategic deployment**
- **Hallucination**
- **Value misalignment**



## Future Visions

- **Decision-making**
- **Agent**
- ... ..



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**Thank you!**

[www.cnipa.gov.cn](http://www.cnipa.gov.cn)



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