Utilization of AI for patent classifications at JPO

February 2022

Japan Patent Office

Outline of patent examination

Acceptance of application → **Formality Examination** → **Substantive Examination (Patent)** → **Registration**

Finding document highly relevant with claimed invention from a large amount of technical literatures

Classification → **Understanding of Claimed Invention** → **Prior Art Search** → **Patentability Judgement**

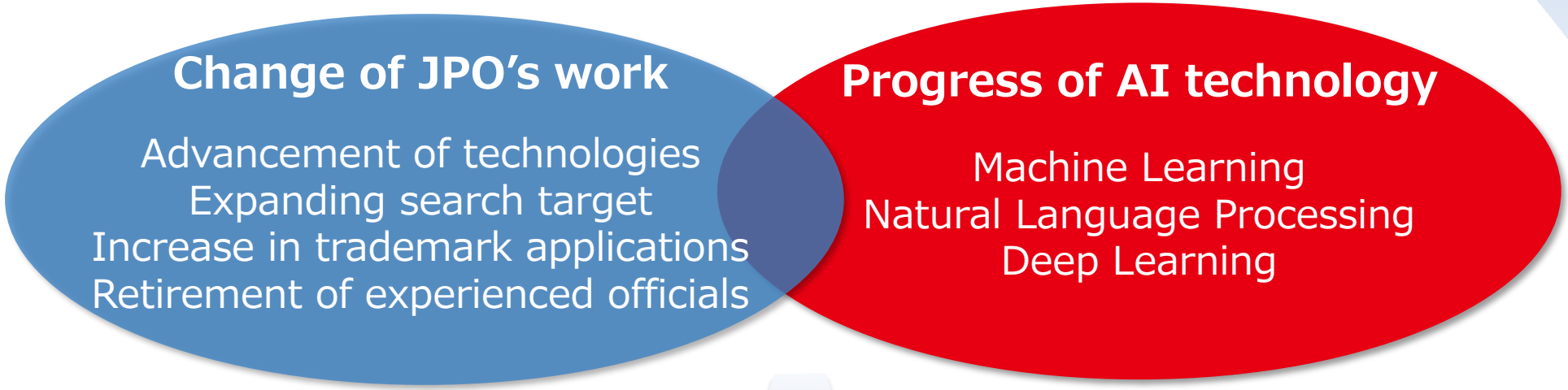
Assigning patent classification based on technical contents of application

Understanding claimed invention by careful reading of application documents

Examination of patentability
- Novelty
- Inventive step
- Description requirement

etc.

Purpose for making use of AI technology



Making use of AI technology

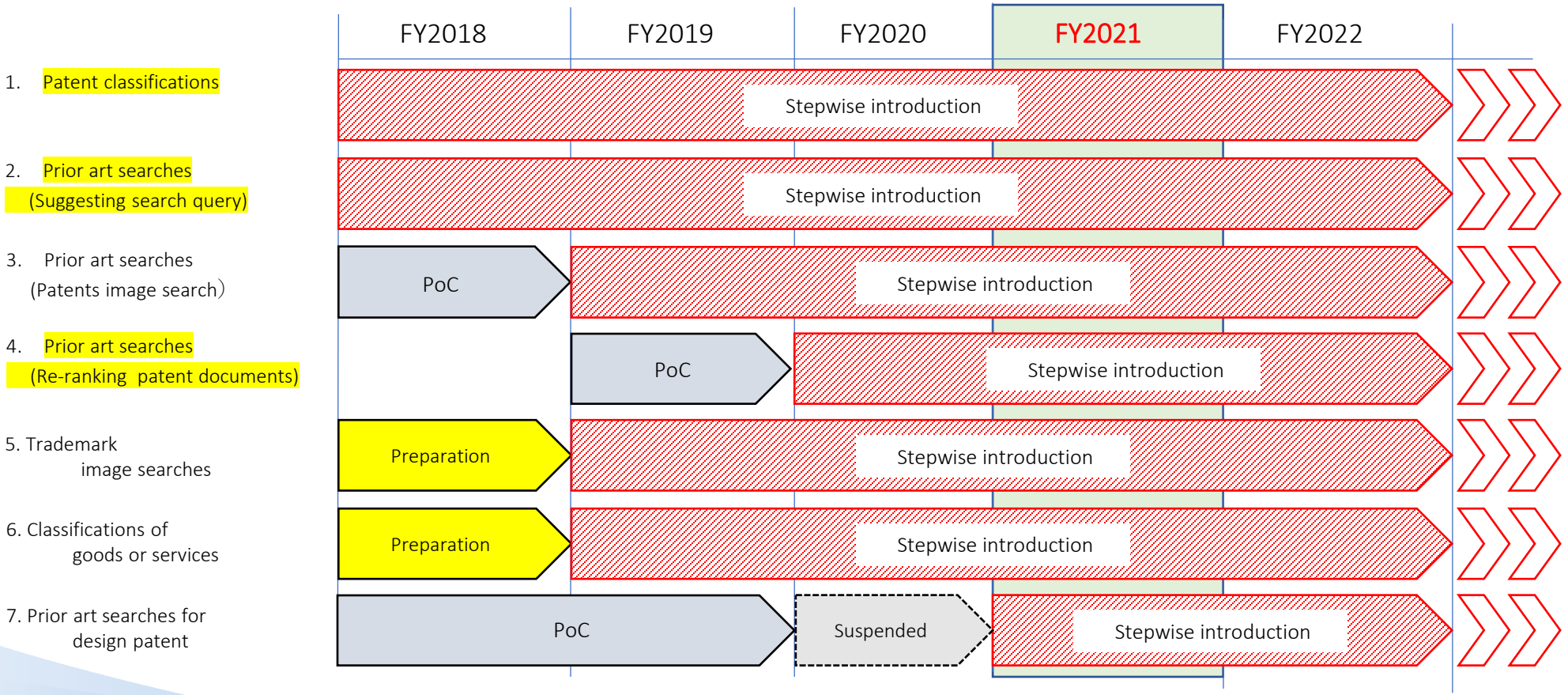
Goal!

Sophisticated and **efficient** operations

➡ Improve user services

Action plan

- JPO has made activities for making use of AI technology based on **Action plan** since FY2017.
- Action plan was revised in FY2021 based on the result of activities in FY2020.



(*) The above actions are based on rough estimates and progress may vary depending on the development of demonstrations, advancement of the relevant technologies and other circumstances.

Major revision of AI action plan

- The JPO is planning to revise the plan significantly because
  - all projects are moved to the PoB phase
  - AI technology rapidly developed in these 5 years

- The JPO review the AI-related activities since 2017. At the same time, the JPO is investigating the latest AI-related technology and considering which office work is effective to apply AI technology.

- This revision project is underway with external experts.

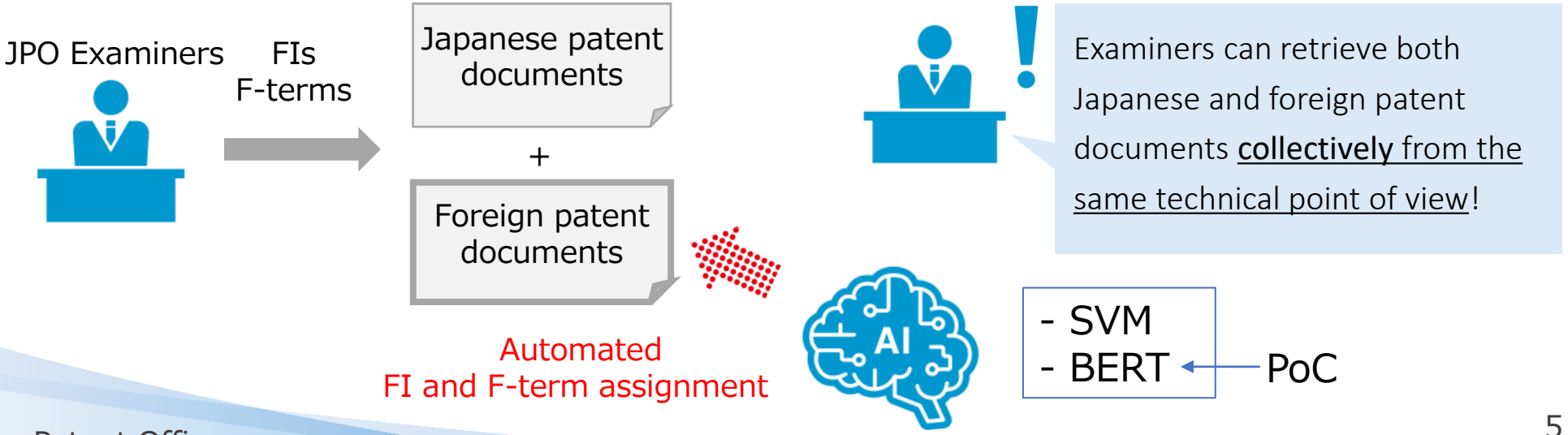
- New AI action plan will be released in 2022.

Auto classification

Main Points

Issue: JPO examiners couldn't use FIs and F-terms (JPO-specific search indexes) to retrieve foreign patent documents though they are useful to retrieve relevant documents to Japanese applications.

Solution: Assigning FIs and F-terms to foreign patent documents automatically, JPO examiners can conduct collective search on Japanese and foreign documents with the indexes.

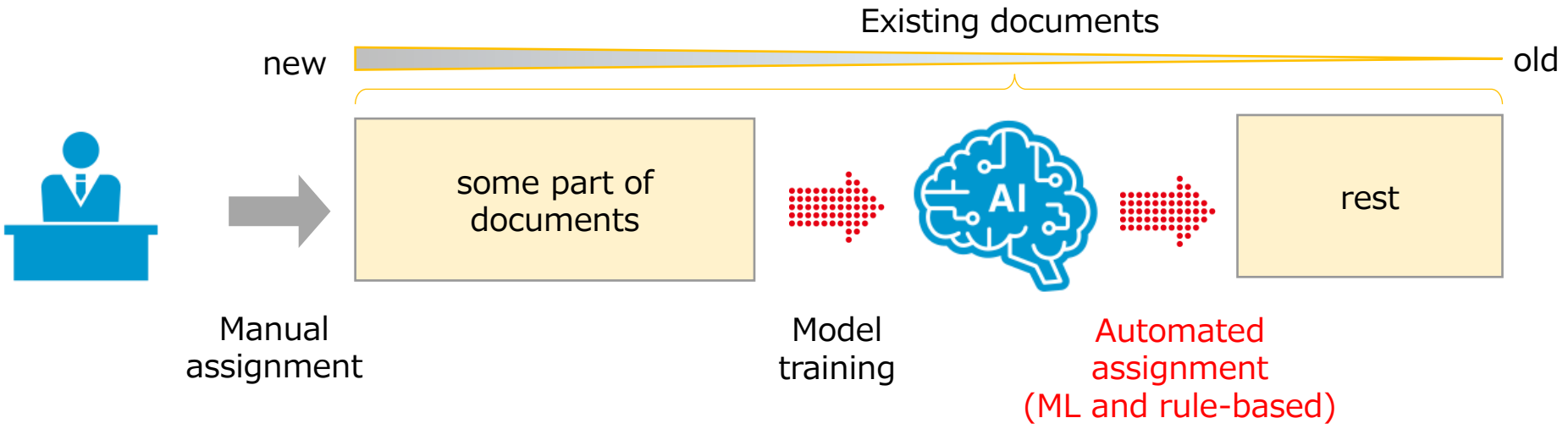


Further consideration for auto classification

- The JPO started to apply BERT to auto classification.

- The JPO is considering applying auto classification to the re-classification as a pilot program.

Auto re-classification

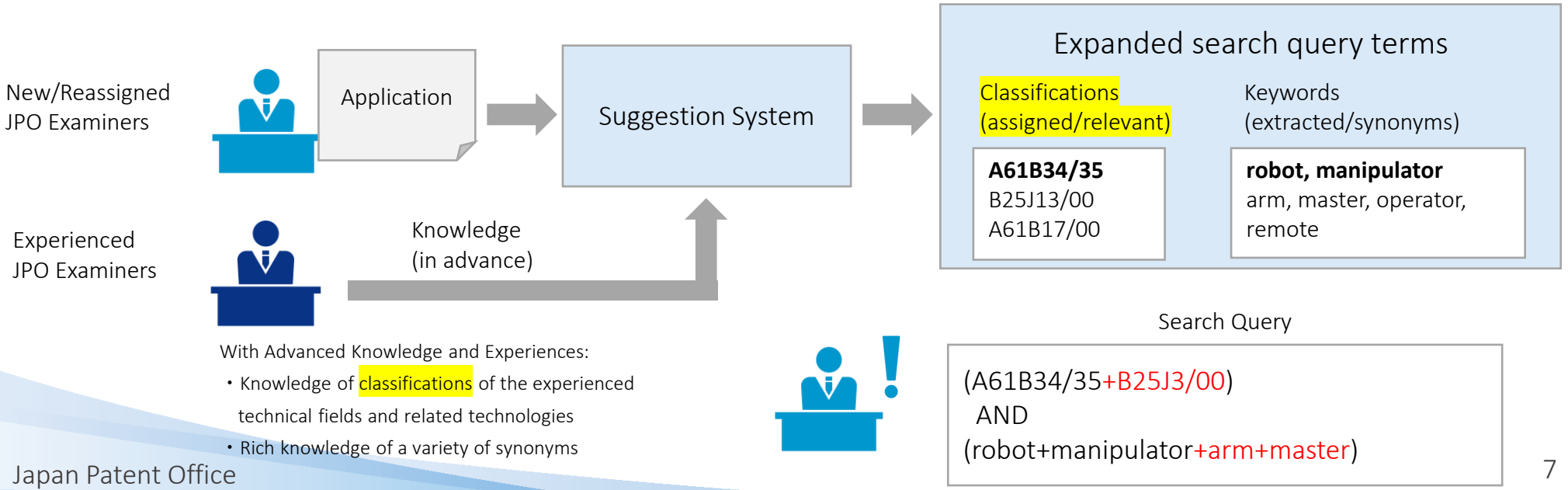


Expanding search query terms

Main Points

Issue: It's difficult for new/reassigned examiners to select effective search query terms.

Solution: Possible classifications, keywords and synonyms based on the accumulated knowledge and experiences of experienced examiners help new/reassigned examiners a lot.

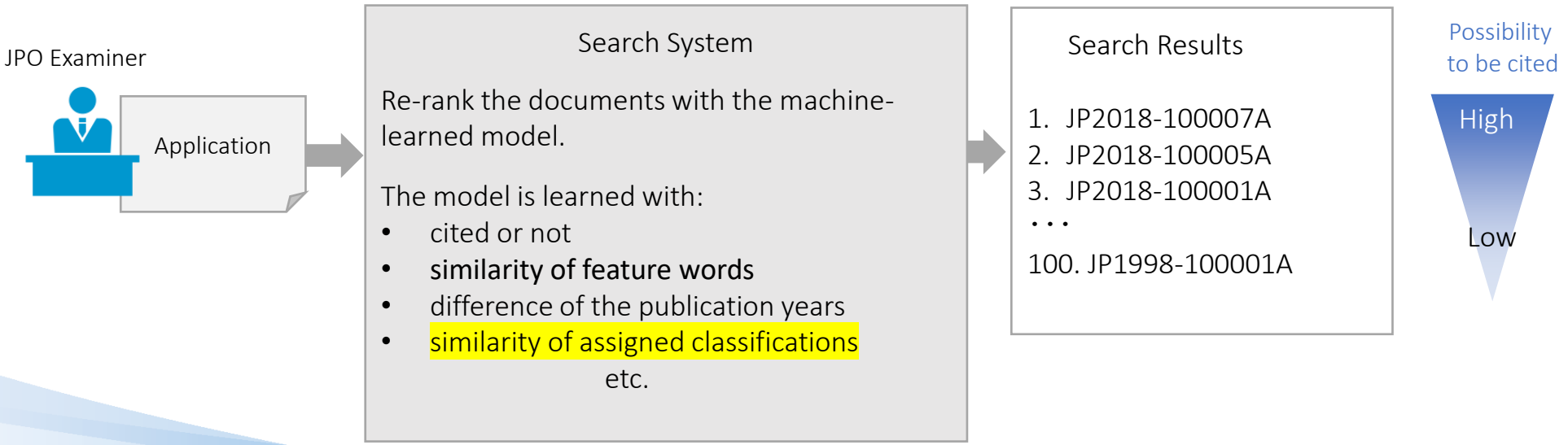


Displaying Ranking of Patent Documents

Main Points

Issue: Examiners had to read hundreds of documents to retrieve a relevant document.

Solution: Examiners can read the most important document first if the candidate documents are ordered by the possibility to be cited.



Thank you!