

# **Current Status of Machine Translation System in the JPO**

---

***September 2, 2013***

***Hitoshi HONDA***  
***Patent Information Policy Planning Office***  
***Japan Patent Office***

## ***Title:***

# ***Current Status of Machine Translation System in the JPO***

## ***Contents:***

### ***1. JPO's Current Translation Utilization***

***1-1. Translation Role in Examination Work***

***1-2. Mutual Utilization of Examination Information with Foreign Offices through Machine Translation***

***1-3. Industrial Property Information Dissemination to the Public in English***

### ***2. Approach for Quality Improvement of Machine Translation (Japanese to English)***

### ***3. Further Utilization of Machine Translation***



## ***1. JPO's Current Translation Utilization***

### ***1-1. Translation Role in Examination Work***

(a) Understanding the invention  
of the application



(b) Consideration of search policies



(c) Searching documents



(d) Comparison & judgment



(e) Notice of examination results

**Regarding “Searching documents”**  
**> Easy access to foreign documents**

	JP	US	EP	WO	KR	CN	DE	FR	CA	GB	CH	Others (*)
Japanese full text	○				●	●						
Japanese abstract		○	○			△						
English full text		○	○	○								
English abstract	○	○	○	○	○	○	○	○	○	○	○	○

○ Original sentences

○ Human-translated sentences

△ Start the creation through human translation from FY2012

● Will create through machine translation in FY2014

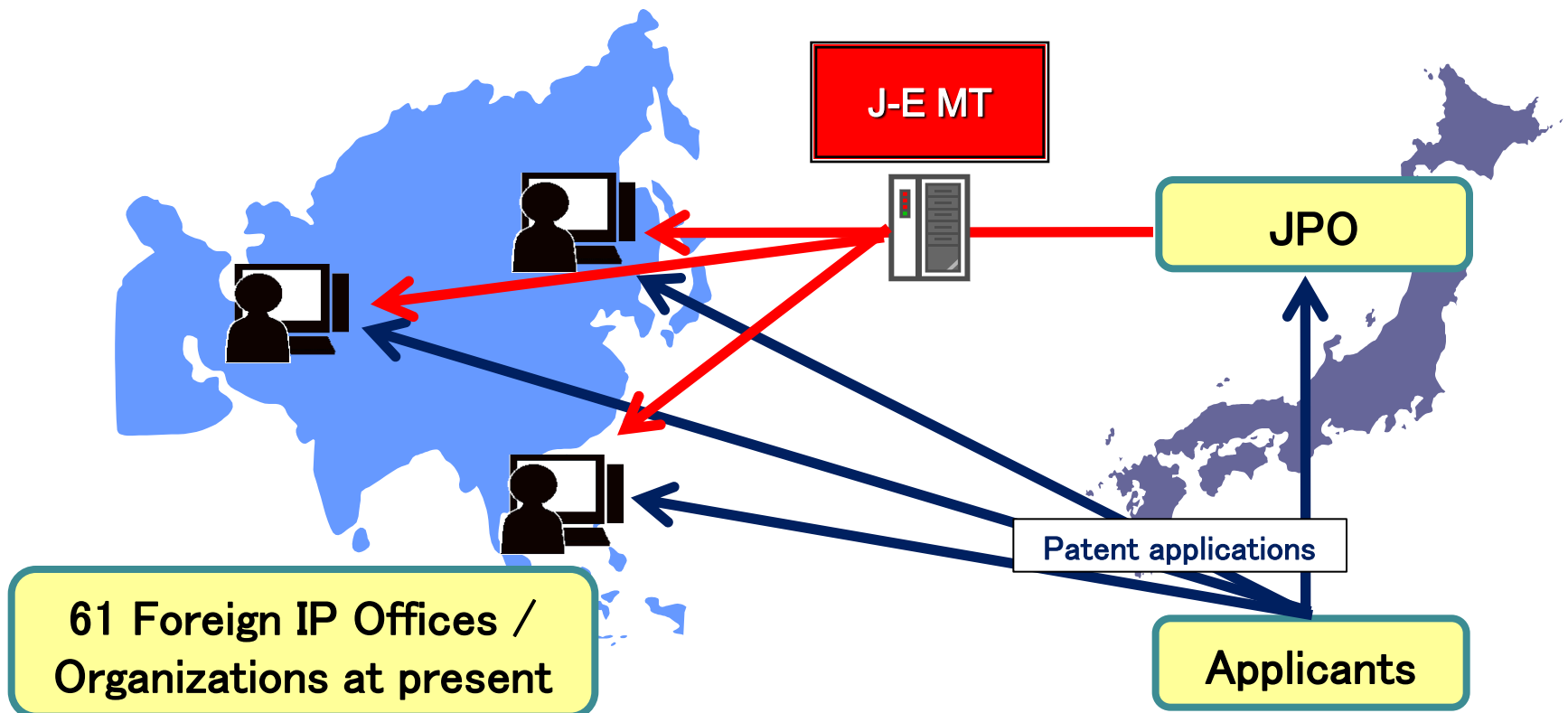
\*:DE utility models and RU, AU and other country full texts and abstracts



***1-2. Mutual Utilization of Examination Information  
with Foreign Offices  
through Machine Translation***

## **AIPN: Advanced Industrial Property Network**

- > The JPO exam results are distributed via the Internet  
(only for Examiners)
- > The Information is translated into English by  
**Japanese - English Machine Translation.**



# Example of AIPN Search Results

## Patent application number 2001-123456

File Wrapper Document List - Click document title to display contents.  
The dates in the list are shown in the format of "dd.mm.yyyy"

- Application data and Transaction history

- 20.04.2001: [Request for a Patent](#)
- 20.04.2001: [Description](#)
- 20.04.2001: [Drawings](#)
- 20.04.2001: [Abstract](#)
- 02.10.2001: [Ex Officio Correction of Defect of Abstract](#)
- 23.04.2002: [Request for Examination \(Others' Request\)](#)  
---, ---, -----: -- Certified or Appended Information
- 28.05.2002: [Written Notice \(others' request\)](#)
- 22.07.2003: [Search Report by Designated Searching Authority](#)
- 12.08.2003: [Assessment on Search Report by Designated Searching Authority](#)
- 02.09.2003: [Notification of Reasons for Refusal](#)
- 04.11.2003: [Written Argument](#)
- 04.11.2003: [Written Amendment](#)
- 21.04.2004: [Decision to Grant a Patent](#)

[Translation done.]

## Examples of document titles in Japanese (Provided here for reference only)

- 出願マスタ基本項目

- 20.04.2001: 特許願
- 20.04.2001: 明細書
- 20.04.2001: 図面
- 20.04.2001: 要約書
- 02.10.2001: 要約不備職権訂正
- 23.04.2002: 出願審査請求書(他人)  
---, ---, -----: 認定・付加情報
- 28.05.2002: 通知書(他人請求)
- 22.07.2003: 検索報告書
- 12.08.2003: 検索外注利用状況票
- 02.09.2003: 拒絶理由通知書
- 04.11.2003: 意見書
- 04.11.2003: 手続補正書
- 21.04.2004: 特許査定

Application Info.  
&  
Legal Status Info.

File Wrapper  
Document List

Office Action,  
Search Report,  
Written Opinion,  
Examiner's Note  
etc.



# Example of Patent Examination-related Information

**ENGLISH** **JAPANESE**

**Note: Japanese environment is required to properly display Japanese characters.  
You must install and use a TIFF image plug-in on your system in order to view image files directly.**

**Disclaimer:**  
This English translation is produced by machine translation and may contain errors. The JPO, the INPIT, and those who drafted this document in the original language are not responsible for the result of the translation.

**Notes:**  
1. Untranslatable words are replaced with asterisks (\*\*\*\*).  
2. Texts in the figures are not translated and shown as it is.

Translated: 16:32:55 JST 06/05/2008  
Dictionary: Last updated 05/30/2008 / Priority:

**Description**

[Document Name] Description

[Title of the Invention] Flexible copper-clad sheet

[Claim(s)]

[Claim 1] In the flexible copper-clad sheet with which the copper layer was formed on the flexible polymer base material (1) The surface of a flexible polymer base material is mostly dotted with the independent minute metal membrane at homogeneity. (2) The part which is not dotted with the metal membrane with the minute surface of a flexible polymer base material has average depth (d)0.1-2.0micrometer impression structure from the surface, and covers a minute metal membrane and impression structure on the surface of (3) flexibility polymer base material. The flexible copper-clad sheet characterized by forming the intermediate metal layer and the copper layer in this order.

**ENGLISH** **JAPANESE**

**Note: Japanese environment is required to properly display Japanese characters.  
You must install and use a TIFF image plug-in on your system in order to view image files directly.**

**Notification**

Notification of Reasons for Refusal

Application number: Application for patent 2001-123456  
Drafting: Heisei 15(2003) August 12  
examiner: KAGAMI, Nobuhiro 9341 3S00  
inventive/Applicant: NISHIKAWA, Shigeaki  
Provisions: Patent Law Section 29(2)

Application should be refused for the reason mentioned below. If the applicant has any argument against the reason, such argument should be submitted within 60 days from the date on which this notification was dispatched.

Reason

The claimed invention(s) in the each claim listed below of this patent application should not be granted a patent under the provision of Patent Law Section 29 (2) for the reason that the claimed invention(s) have easily been made by persons who have common knowledge in the technical field to which the invention(s) relate.

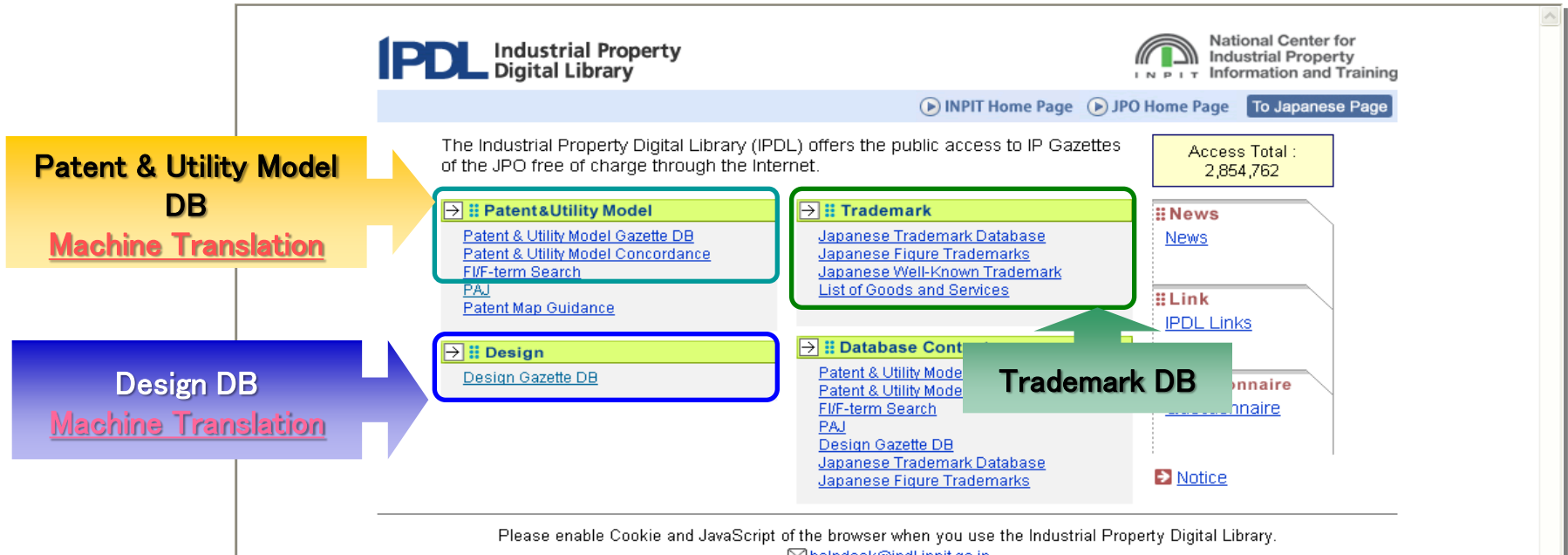
> **Dictionary: 85,000 words**



**+ 5,000 words have been added every year**



***1-3. Industrial Property Information Dissemination  
to the Public in English***



The screenshot shows the IPDL website with the following sections and annotations:

- Patent & Utility Model DB** (Yellow arrow): Includes Patent & Utility Model Gazette DB, Patent & Utility Model Concordance, FI/F-term Search, PAJ, and Patent Map Guidance.
- Design DB** (Blue arrow): Includes Design Gazette DB.
- Trademark DB** (Green box and arrow): Includes Japanese Trademark Database, Japanese Figure Trademarks, Japanese Well-Known Trademark, and List of Goods and Services.
- Database Content** (Green box): Includes Patent & Utility Model Gazette DB, Patent & Utility Model Concordance, FI/F-term Search, PAJ, Design Gazette DB, Japanese Trademark Database, and Japanese Figure Trademarks.

## English Databases on IPDL

### 1. Patent & Utility Databases

#### DB with Machine Translation Service

Patent & Utility Model Gazette DB  
 Patent & Utility Model Concordance  
 FI/F-term Search

#### Human Translation Database

Patent Abstracts of Japan (PAJ)  
 Patent Map Guidance

### 2. Design Database

#### DB with Machine Translation Service

Design Gazette DB

### 3. Trademark Database

#### Database (Bibliographic Items such as Dates and Numbers)

Japanese Trademark Database  
 Japanese Figure Trademarks  
 Japanese Well-Known Trademark  
 List of Goods and Services

## <Publication of an unexamined patent application>

JAPANESE [JP,2006-101591,A]

[CLAIMS](#) [DETAILED DESCRIPTION](#) [TECHNICAL FIELD](#) [PRIOR ART](#) [EFFECT OF THE INVENTION](#) [TECHNICAL PROBLEM](#) [MEANS](#) [EXAMPLE](#) [DESCRIPTION OF DRAWINGS](#) [DRAWINGS](#)

\* NOTICES \*

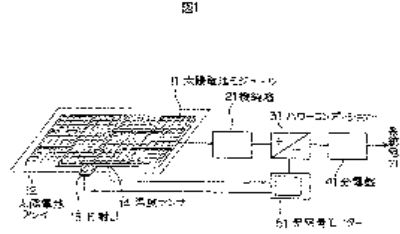
**JPO and INPIT are not responsible for any damages caused by the use of this translation.**

1.This document has been translated by computer. So the translation may not reflect the original precisely.  
2.\*\*\* shows the word which can not be translated.  
3.In the drawings, any words are not translated.

**CLAIMS**

[Claim(s)]  
[Claim 1]  
In a photovoltaic power generation apparatus provided with a solar cell array which carried out series parallel connection of two or more solar cell modules, and formed them, and a power conditioner which has a converter which carries out conversion into ac of the direct-current generated output from this solar cell array,  
An actinometer is attached so that said solar cell array, an installation direction, and installation \*\*\*\*\* may become the same, and a temperature sensor is

Drawing selection



[Translation done.]

**All parts of the text (except drawings) are translated  
by Machine Translation.**



## ***2. Approach for Quality Improvement of Machine Translation (Japanese to English)***

## Collection and registration of unknown words

Unknown and untranslatable words are collected in IPDL and AIPN and added to the user dictionary (5,000 words/year). So far 85,000 words were included.



## Feedback from foreign IPOs

Mistranslation feedback provided by AIPN users (examiners of foreign offices) is analyzed and registered in the dictionary.

## Upgrade of machine translation engine

Enrichment of translation knowledge and increase in the number of technical and IP terms (December, 2011)

## Establishment of translation memories

Fixed expressions used for notification of reasons for refusal are registered in translation memories.

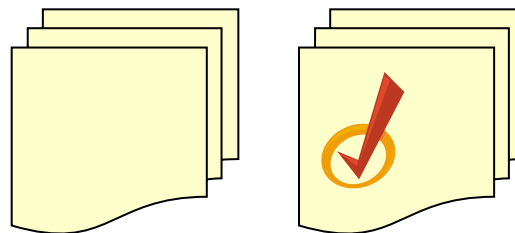
- (a) The survey was conducted for the quality improvement of Japanese to English machine translation on AIPN in 2003, 2007 and 2008. Based on the results, fixed expressions were extracted and about 1,110 sentences were registered.
- (b) Fixed expressions (about 460 sentences) which examiners use in drafting notification of reasons for refusal were registered in 2009, 2010 and 2012.

○ Mutual Machine Translation

***Aim: “To help the offices overcome the language barrier of patent information and allow greater access to each other’s patent information.”***

**Error review feedback process (September ~ December 2011)**

***Feedback from EPO and USPTO was utilized.***



**Upgrade of machine translation engines  
by JPO, KIPO, and SIPO (January 2012 ~)**

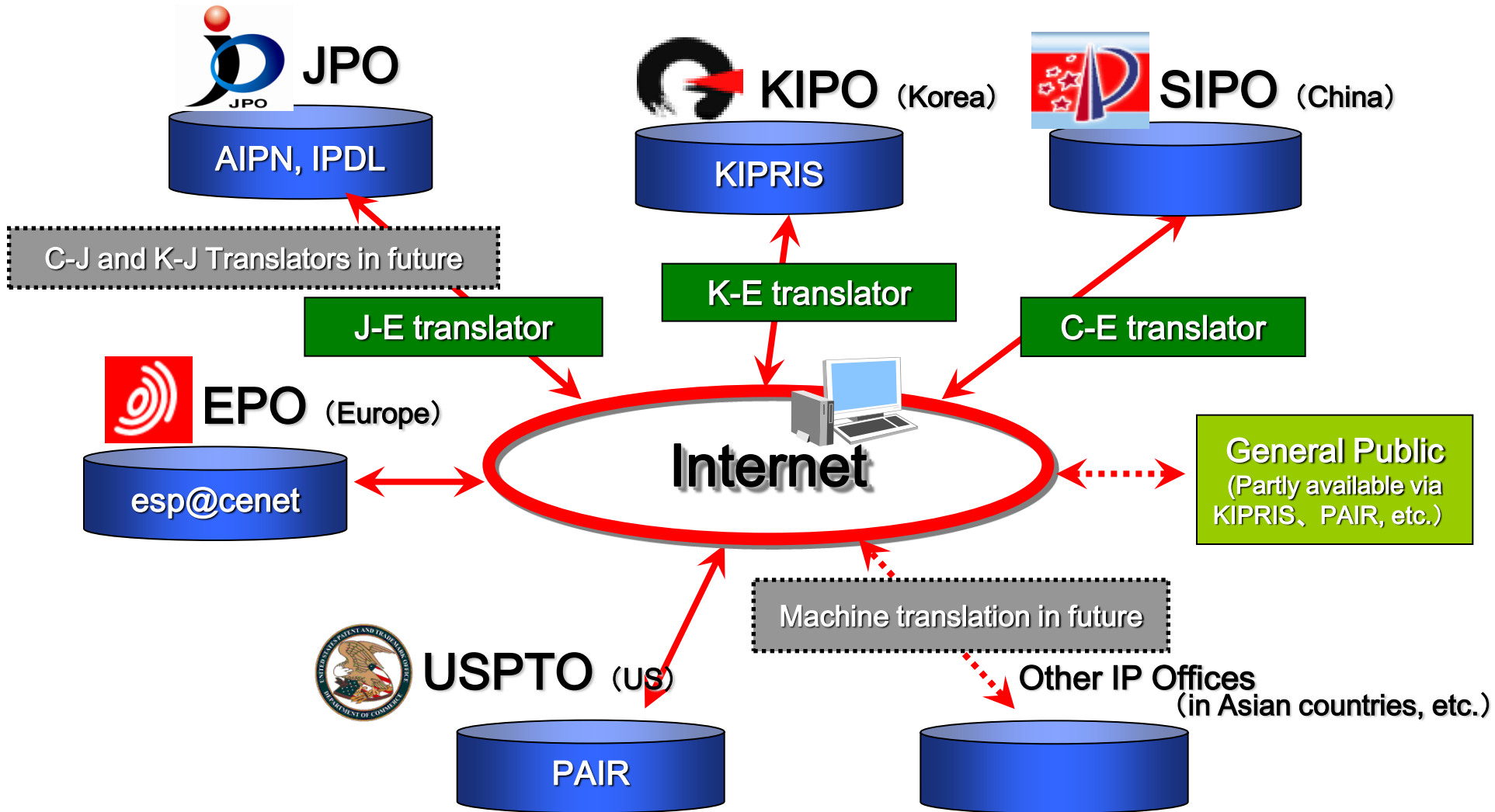
- > Based on the feedback results, JPO, KIPO and SIPO upgraded their machine translation engines.**
- > JPO, KIPO and SIPO reported improvement results to IP5 respectively.**



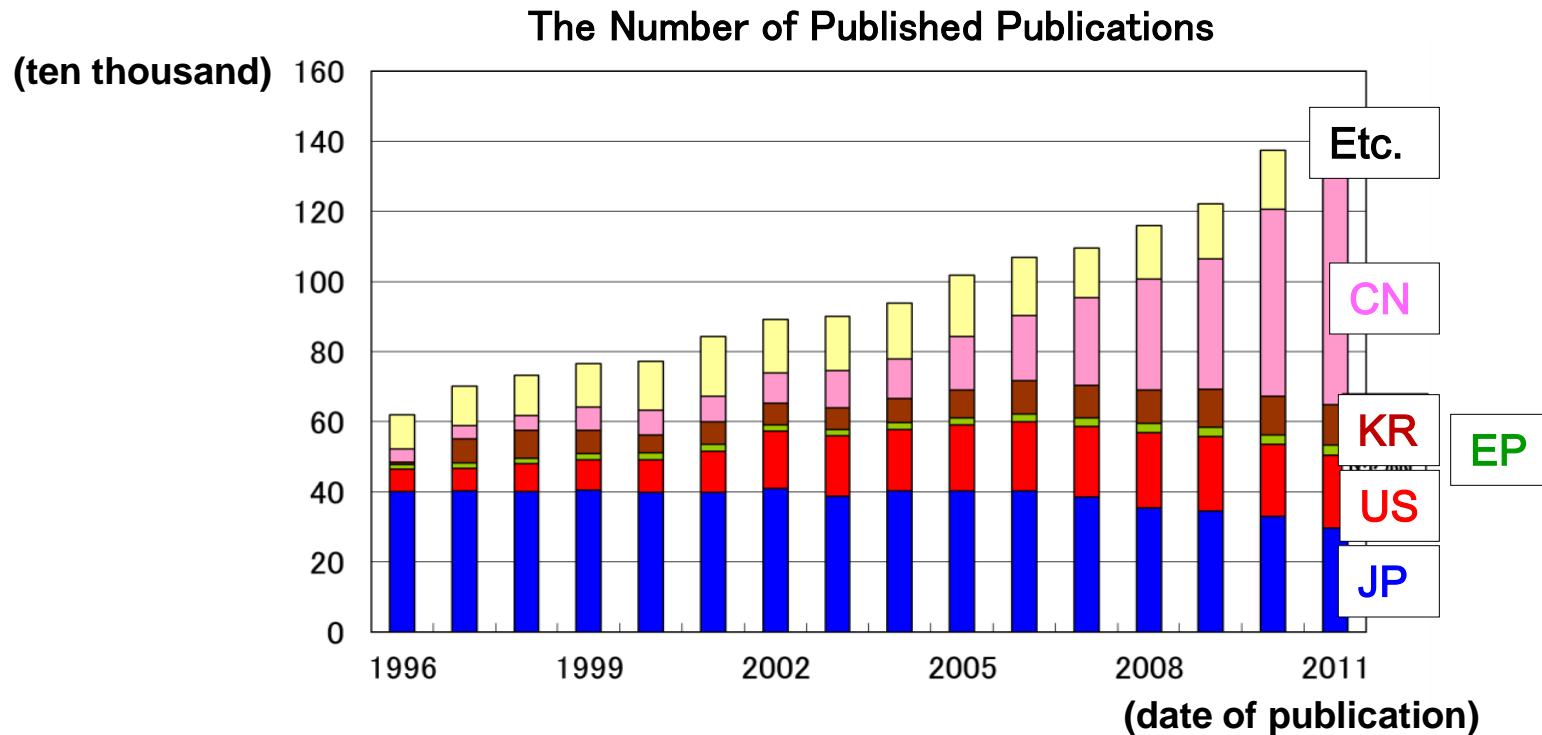
### ***3. Further Utilization of Machine Translation***



Providing the search and examination results in English has become standard practice.

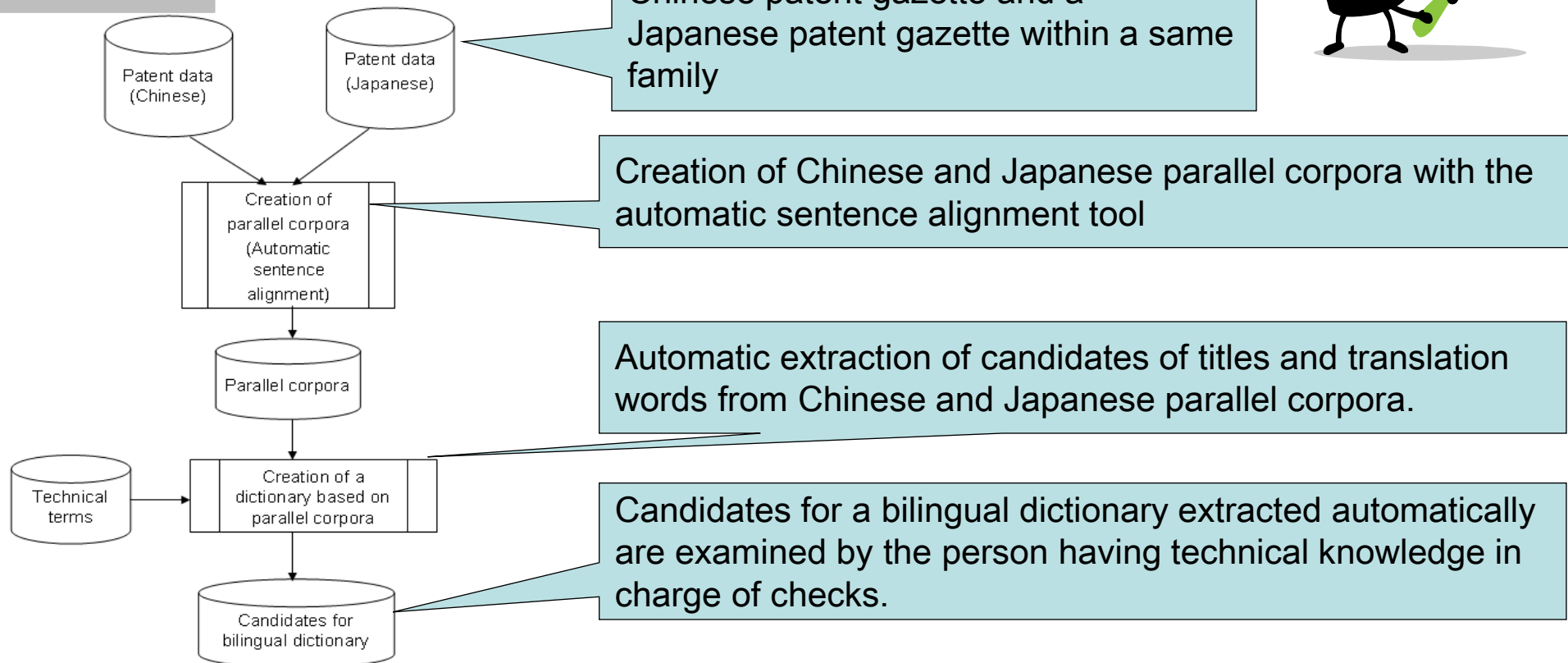


- > The number of Chinese and Korean patent documents have been increasing.
- > The urgency is required for arranging environments, where such documents are easily searchable.

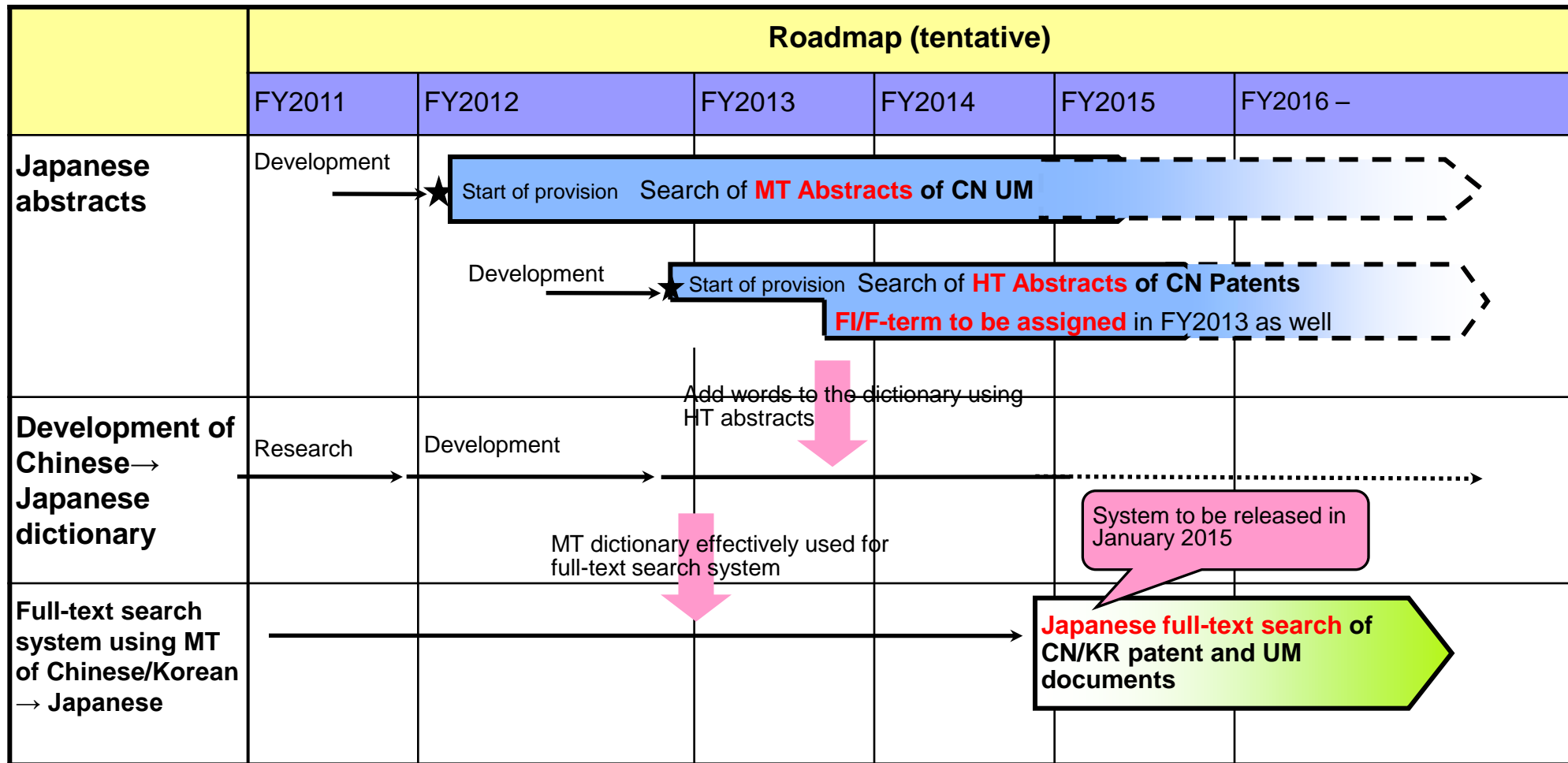


- In 2012, JPO created Chinese-Japanese parallel translation dictionary with a million technical terms used in patent documents, intending the contribution to the quality improvement of Chinese to Japanese machine translation of Chinese documents.
- In 2013, another million words of Chinese to Japanese parallel translation dictionary data will be created .

## Creation flow



# Approach for Chinese and Korean Documents





*Thank you for your attention*