APPLIED TESTING OF HICATS/JE *FOR* JAPANESE PATENT ABSTRACTS

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1. Introduction

Japio (Japan Patent Information Organization) was established as a juridical person on August 1, 1985, with the permission of the Japanese Patent Office, Ministry of International Trade and Industry. Japio is an information organization offering retrieval services of Patents, Utility Models, Designs and Trademarks.

Upon request from the Japanese Patent Office, Japio translates Japanese Abstracts of Published Unexamined Patent Applications (Official Gazette) into English.   The problems that have arisen in connection with performing this translation task are outlined below, and it is our aim to overcome these problems by adopting machine translation.

(1) It is extremely difficult to guarantee that the supply of translators with the expert technical knowledge is equal to the demand for translation according to budgets and the following problems have resulted due to the imbalance in numbers of translators and volume of works.

 (A) Each year more than 20% of the Japanese Abstracts remain untranslated into English.
 (B) Due to the overall year-on-year increase in the volume of Published Patent Applications it is becoming increasingly difficult to keep up with the pace of translation of experts into English (an increase of about 30,000 documents per year).
 (C) It is difficult to satisfy the new demand for English translation of the Japanese Abstracts of Published Utility Model Applications.

(2) It is necessary to shorten the period of translating Japanese Abstracts into English to demand for fastness of patent information.

2. The characteristics of Japanese Abstracts from the view point of machine translation

(1) The following characteristics are noticeable when a lot of information will be included in a Japanese Abstract that is limited to 350 characters.

 (A) Logical subjects and objects of the sentences are often left out.
 (B) Auxiliaries and verbs are often left out.
 (C) One sentence becomes longer (average 75 characters) making it ambiguous and very difficult to handle.

(2) There are many technical words used in patent documents especially.
In order to perform a more precise machine translation of the Japanese
Abstracts mentioned in (1), it is necessary to carry out pre-editing of the
original script by reintroducing the parts of the text and by eliminating
the ambiguities to obtain Japanese sentences be fit for machine translation.
And in order to overcome the problems posed in (2), it is necessary to
provide a suitable technical dictionary for patent documents.

3. Operation of the machine translation system

(1) Present making process of Patent Abstracts in English
   (A) Patent Abstracts in Japanese are translated by translators into
       English. (about 15 days)
   (B) Abstracts in English are input in the file after revision.
       (about 20 days)
   (C) Abstracts in English input in the file are proofread. (about 10 days)

(2) Automation of the translation process into English
   The operating method listed below are being examined in order to rationalize
   the translation process in the light of the characteristics of the Patent
   Abstracts in Japanese mentioned in Item 2.

     Step 1: Carry out a pre-editing of the Patent Abstracts in Japanese.
     Step 2: Identify the unknown words.
     Step 3: Store the unknown words in the user's dictionary.
     Step 4: Translate the Abstracts in Japanese into English.
     Step 5: Perform a post-editing of the English translation.

   The pre-editing of the Abstracts in Japanese for translation into English
   actually requires a considerable amount of time for consuming work.
   Japio is studying to set up standards to make Japanese Abstracts be fit for
   machine translation into English. In the result, Abstracts in Japanese will
   be translated by machine translation into English with simple pre-editing.

4. Requirements to machine translation system
   Requirements are as follows,
(1) We need to have the support function of writing the suitable Japanese
   sentences for automatic translation into English.
(2) The module of the translation into English must be independent of the
   machine translation system. Because we want to freely take the translating
   function into our own system.

5. Conclusion

   Japio is studying and examining the possibility of introducing machine
   translation system.   However, the current situation indicates that
   problems with translation accuracy and lack of the completed technical
   dictionary make it difficult to start machine translation operations
   immediately. On the other hand, in consideration of the increase in
   volume of Patent and Utility Model applications, it would appear that there
   is no other feasible alternative.   Therefore, we are still interested in
   introducing machine translation system to translate all Abstracts in
   Japanese of Patents and Utility Models into English.   We will encourage
   the manufacturers to improve the accuracy and functionality of their
   machines and systems.   And at the same time we, Japio, will strive to
   ensure that the Abstracts in Japanese are more suited to being translated
   by machine and we will also work towards preparing a suitable technical
   patent dictionary.