Statistical Machine Translation with Long Phrase Table and without Long Parallel Sentences

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Abstract

In this study, we paid attention to the reliability of phrase table. To make phrase table, We have been used Och's method[3]. And this method sometimes generate completely wrong phrase table. We found that such phrase table caused by long parallel sentences. Therefore, we removed these long parallel sentences from training data. Also, we utilized general tools for statistical machine translation, such as "Giza++"[4], "moses"[5], and "training-phrase-model.perl"[6].

We obtained a BLEU score of 0.2229 of the Intrinsic-JE task and 0.2393 of the Intrinsic-EJ task for our proposed method. On the other hand, we obtained a BLEU score of 0.2162 of the Intrinsic-JE task and 0.2533 of the Intrinsic-EJ task for a standard method.

This means that our proposed method was effective for the Intrinsic-JE task. However, it was not effective for the Intrinsic-EJ tasks. Also, our system was average performance of all system. For example, our system was the 20th place in 34 system for Intrinsic-JE task and the 12th place in 20 system for Intrinsic-EJ task.

Keywords: *"SMT" "Long Phrase Table" "Remove Long Parallel Sentences"*

1 Introduction

Many machine translation systems have been studied for long time and there was three generations of this technology.

The first generation was a rule-based translation method, which was developed over the course of many years. This method had translation rules that were written by hand. Thus, if the input sentence completely matched the rule, the output sentence had the best quality. However, many expressions are used for natural language, this technology had very small coverage. In addition, the main problem are that the cost to write rules was too high and that maintaining the rules was hard.

The second generation was example-based machine translation method. This method finds a similar sentence from corpus and generates a similar output sentence. The problem with this method is calculating the similarity. Many methods like dynamic program (DP) are available. However, they are very heuristic and intuitive and not based on mathematics.

The third generation was a statistical machine translation method and this method is very popular now. This method is based on the statistics, and it seems very reasonable. There are many versions of statistical machine translation models available. An early model of statistical machine translation was based on IBM1 $\sim$ 5[2]. This model is based on individual words, and thus a "null word" model is needed. However, this "null word" model sometimes has very serious problems, especially in decoding. Thus, recent statistical machine translation systems usually use phrase based models. This phrase based statistical machine translation model has translation model and language model. The phrase table is a translation model for phrase-based SMT and consists of Japanese language phrases and corresponding English language phrases and these probabilities. And word N-gram model is used as a language model.

By the way, there are two points to evaluate English sentences for Japanese to English machine translation. One is adequacy, and the other is fluency. We believe adequacy is related to translation model $P(English|Japanese)$ and fluency is related to language model $P(English)$. Similar languages like English and Italian may only require short phrases for accurate translations. However, languages that differ greatly, like Japanese and English, require long phrase table for accurate translation. We implemented our statistical machine translation model using long phrase tables.

Also, we found long parallel sentences for training parallel data are easily result into wrong phrase table, and wrong phrase table made poor translation results especially for the adequacy. Therefore we removed long parallel sentences.

We used general tools for statistic machine translation for this experiments. As the results, the proposed method was effective for the Intrinsic-JE task. However, it was not effective for the Intrinsic-EJ task. tasks. And our system had average performance for NTCIR-7 Patent Translation task . For example, our system was the 20th place in 34 system for Intrinsic-JE task and the 12th place in 20 system for Intrinsic-EJ task[1].

2 Concepts of our Statistical Machine Translation System

In this section, we will describe our concepts behind our Japanese English statistical machine translation system.

2.1 Long Phrase Tables (Adequacy)

We have been evaluated English translated sentences both the adequacy and the fluency. We believe that adequacy is related to translation model $P(English/Japanese)$. In similar languages like English and French, the difference in word position is small. In such a case, short phrase tables poses little problem. However, in Japanese to English translation, verbs are sometimes moved from their original position. Therefore, we needed to make long phrase tables. So, we set the parameter of max-phrase-length to 20 to make phrase table.

2.2 gram Language Model (luency)

We believe that fluency of English translated sentences is related to language model $P(English)$. In general, when we used a higher order N-gram, the number of parameters dramatically increases, and the reliability for each parameter decreases. Thus we used a normal 5-gram model and did not use a higher N-gram model. This model was the best language model among N-gram from our experiments at the previous dry-run Intrinsic-JE task.

2.3 Removed long parallel sentences

We used only the NTCIR-7 Patent Translation Task training corpus. This training corpus included some very long parallel sentences. And we found that long parallel sentences make wrong phrase table caused. Therefore, we removed these long parallel sentences from training data.

2. Standard Tools

Many statistical machine translation tools have been developed. These tools have been highly reliable and widely used. So whenever possible we did not make special tools.

1. GIZA++.2003-09-30.tar.gz [4]
2. moses.2007-05-29.tgz [5]
3. training-release-1.3.tgz(train-phrase-model.perl) [6]

We made only a small number of minor tools for building temporal corpus.

3 Experiments with Statistical Machine Translation

3.1 Removed long parallel sentences

When we made phrase table for the NTCIR-7 Patent Translation Task training corpus, Some lists of phrase table are completely wrong. Table 1 presents such wrong phrase table. And wrong phrase table makes poor translation results especially for the adequacy.

Also, we found that long parallel sentences for training parallel data were easily result into such wrong phrase table. So we removed these long parallel sentences from training data.

Table 1. Examples of Wrong Phrase Table

```
図 3 及び 図 4 に 示す よう に |||As shown in FIGS . 6 and 7
        0.047619 4.03037e-09 0.0243902 1.52103e-11 2.718
、 それ 以外 |||4 , while all other
        1 3.84583e-05 0.0217391 4.24439e-09
1 3 は |||1 is a
        0.0010582 0.000901274 0.000698568 0.00721987
1 3 は |||1
        4.97396e-06 7.91046e-05 0.000349284 0.0497444
コンデンサ |||i ) a
        0.333333 0.0001482 9.04732e-05 1.01046e-06
コンデンサ |||i )
        0.000857633 0.0001482 9.04732e-05 2.10078e-06
マイクロコンピュータ |||merely
        0.00263852 0.000423 0.000176398 0.0001555
```

We used only the NTCIR-7 Patent Translation Task training corpus, (Japanese-English parallel sentences). So, we used 1798581 Japanese-English parallel sentences for the Intrinsic-JE task and Intrinsic-EJ task. We refer to this experiments as ”standard”.

On the other hand, in the Intrinsic-JE task, we removed more than 64 characters Japanese sentences for training parallel data. So, we used 614298 Japanese-English parallel sentences. Also, in the Intrinsic-EJ task, we removed more than 128 character English sentences for training parallel data. So, we used 1062596 English-Japanese parallel sentences. We refer to this experiments as ”proposed”.

Examples of long parallel sentences are presented in table2.

Table 2. Example of Long Parallel Sentences

J1	図３０図に示す実施例は、路面のセンターに１本のガイド５を敷設し、そのガイド５を車体１５に取り付けたガイドローラ３により挟み込んで支持するように構成したものであり、前方又は後方から観た状態を示している。
J2	基本的には、図３１（ａ）の平面図に示すようにガイド５を両側から挟み込んで支持する対のガイドローラ３を２組設けることによって、安定性を確保するものであり、図３１（ｂ）はその正面図を示している。
J3	また、車軸９は、ダブルウィッシュボーン式のリンク１４により車体１５に支持されていると共に、コイルスプリング１６及びダンパー（不図示）により衝撃が吸収緩和されるようになっている。
J4	３輪車の場合は、その構造から明らかなようにセンターに車輪があるため、図３０に示す実施例は適用できず、車両の両外側に２本のガイド５を敷設した図３４が最も適用しやすい構成である。
E1	In the embodiment shown in FIG. 30, one guide 5 is laid at the center of the road surface, and the chassis 15 is supported by clamping the guide 5 by the guide rollers 3 attached to the chassis 15, the view being taken from the front or rear of the vehicle.
E2	Basically, as shown in the plan view of FIG. 31(a), stability is secured by providing two sets of guide rollers 3 for clamping the guide 5 from both sides thereof to support the chassis 15, and FIG. 31(b) shows a front elevational view thereof.
E3	The axle 9 is supported on a chassis 15 by means of a double wish-bone type link 14, and shocks are absorbed and alleviated by a coil spring 16 and a damper (not shown).
E4	In the case of the three-wheeled vehicle, since one wheel is present at the center as is apparent from its structure, the embodiment shown in FIG. 30 is not applicable, and FIG. 34 in which two guides 5 are laid on the opposite outer sides of the vehicle is easiest to apply.

3.2 Tokenizer

We make the English punctuation procedure using ”tokenizer.perl”. This script was written by Josh Schroeder and based on code by Philipp Koehn. This procedure means that we changed ”,” and ”.” to ” , ” and ” . ”. Also, we did not handle English case. The table 3 show the Japanese and English training parallel data. Also, we convert the complex symbols to simple symbols, like ” |||” to ” |”.

Table 3. Patent-JE training-data

J1	流体圧シリンダ３１の場合は流体が徐々に排出されることとなる。
J2	そして、上記関係を少なくとも１０万枚通紙しても維持しなければならない。
J3	以下、図面を用いて本発明の実施例を説明する。
J4	このようにして車体を浮上させた場合には、摩擦駆動は行われず、磁気誘導による推進駆動、さらにはこの推進駆動にプロペラによる補助推進駆動を加えた推進駆動となる。
E1	When the fluid pressure cylinder 31 is used , fluid is gradually applied .
E2	This relation must be maintained even after passing at least 100,000 sheets .
E3	Referring now to the accompanying drawings , a description will be given of the embodiments of the present invention .
E4	In the case where the chassis is made to float in this manner , frictional drive is not provided , and propelling drive derived from magnetic induction , or auxiliary propelling drive using propellers is added .

3.3 Phrase Tables

We used the “train-phrase-model.perl[6]” in “training-release-1.3.tgz” to make a phrase table. Also, to make long phrase tables, We set the parameter of max-phrase-length to 20. Other parameters were set to defaults values. Table 4 shows examples of phrase tables for the Intrinsic-JE task. Table 5 shows examples of phrase tables for the Intrinsic-EJ task.

Table 4. Examples of phrase-tables (Intrinsic-JE)

```
よう に 構成 さ れ て いる |||designed to have a
        0.2 1.95299e-07 0.0030581 2.46826e-06
よう に 構成 さ れ て いる |||embodiment is constituted in such a manner that
        1 1.94048e-06 0.0030581 5.99598e-12
よう に 構成 さ れ て いる |||extends as
        0.25 7.72576e-10 0.0030581 0.000138348
が オン 状態 で |||is in an ON state ,
        1 0.0119688 0.142857 4.48515e-05
が オン 状態 で ある |||are in ON states
        0.333333 0.000682262 0.2 5.99531e-05
が オン 状態 で ある |||is at an ON state ,
        1 0.000199222 0.2 2.067e-06
が オン 状態 で ある |||is turned on
        0.00140845 5.24495e-06 0.2 0.0159242
図 3 及び 図 4 に 示す よう に |||As shown in FIGS . 3 and 4 ( a ) and 4 ( b )
        1 8.38046e-10 0.0243902 1.30794e-23
図 3 及び 図 4 に 示す よう に |||As shown in FIGS . 3 and 4 ,
        0.0588235 5.24799e-05 0.0243902 1.95205e-08
図 3 及び 図 4 に 示す よう に |||As shown in FIGS . 6 and 7
        0.047619 4.03037e-09 0.0243902 1.52103e-11
```

Table 5. Examples of phrase-tables (Intrinsic-EJ)

```
and the peripheral ||| および その 周辺
        0.0434783 0.156401 0.0434783 0.000416834
and the peripheral ||| および 周辺
        0.1 0.273241 0.0434783 0.0507808
and the peripheral ||| と 、 周辺
        1 0.0797747 0.0869565 0.047392
and the peripheral ||| と その 周辺
        0.111111 0.0497635 0.0869565 0.000970585
and the peripheral ||| または 周辺
        1 0.0188579 0.0434783 0.000645112
and the peripheral ||| 及び その 周辺
        0.125 0.154506 0.130435 0.000352995
and the peripheral ||| 及び 周辺
        0.375 0.26993 0.130435 0.0430036
FIGS . 1 and 2 ||| は 図 1 及び 図 2
        1 0.000268318 0.000664452 0.000898069
FIGS . 1 and 2 ||| 実施 の 形態 1 . 図 1 および 図 2
        0.333333 0.000112931 0.000664452 5.35834e-12
FIGS . 1 and 2 ||| 実施 の 形態 1 . 図 1 および 図 2 に
        1 0.000112931 0.000664452 4.53071e-13
FIGS . 1 and 2 ||| 図
        1.5413e-05 3.97471e-08 0.00332226 0.296793
```

3. gram language model

We calculated the 5-gram model using ngram-count in the Stanford Research Institute Language Model (SRILM) toolkit[7], and set the smoothing parameter as " -ukndiscount". It means original Kneser-Ney discounting. This model is the best language model among N-gram from our previous results at the NTCIR-7 Patent Traslation Task dry-run task.

With the 1798581 parallel sentences, we obtained the followings.

In Japanese to English translation, we had 214265 lines for 1-gram, we had 3249108 lines for 2-gram, we had 4139515 lines for 3-gram, we had 5697384 lines for 4-gram, we had 5872543 lines for 5-gram.

In English-Japanese translation, we had 91772 lines for 1-gram, we had 1754357 lines for 2-gram, we had 3752249 lines for 3-gram, we had 6262883 lines for 4-gram, we had 7684568 lines for 5-gram.

3. Decoder

We used "Moses[5]" as a decoder. In a Japanese to English translation, the position of the verb is sometimes significantly changed from its original position . Thus, we set the "distortion weight (weight-d)" to "0.2" and "distortion-limit" to "-1". Table 6 shows the other parameters. Also, we did not optimize these parameters or did not use the reordering model.

Table 6. Parameters of moses.ini

ttable-limit	40	0			
weight-d	0.2				
weight-l	1.0				
weight-t	0.5	0.0	0.5	0.0	0.0
weight-w	-1				
distortion-limit	-1				

Results of Statistical Machine Translation

Table 7 shows the summary of the results of our statistical machine translation evaluation for the Intrinsic-JE and Intrinsic-EJ and Extrinsic-EJ tasks. Human evaluation results are also included. In this table, "standard" means the results of normal statistical machine translation and "proposed" means the results of removed long parallel sentences from the training parallel data.

As can be seen this table7, our proposed method was effective for the Intrinsic-JE task. However, it was not effective for the Intrinsic-EJ tasks.

Table 7. Results

task	method	BLUE	Human evaluation Adequency	Fluency
Intrinsic -JE	proposed (GROUP-ID=N,RUN=1)	22.29	2.58 (GROUP-ID=tori)	3.44
Intrinsic -JE	standard (GROUP-ID=N,RUN=2)	21.62		
Intrinsic -EJ	proposed (GROUP-ID=N,RUN=1)	23.93		
Intrinsic -EJ	standard (GROUP-ID=N,RUN=2)	25.33		
		MAP	recall relax	
Extrinsic -EJ	standard (GROUP-ID=N,RUN=2)	0.3197	0.7652	

Table 8 shows examples of the results of our statistical machine translation for the Intrinsic-JE task using proposed method. Table 9 shows examples of the results of our statistical machine translation for the Intrinsic-JE task using stardard method. Table 10 shows examples of the results of our statistical machine translation for the Intrinsic-EJ task using proposed method. Table 11 shows examples of the results of our statistical machine translation for the Intrinsic-EJ task using stardard method. Table 12 shows examples of the results of our statistical machine translation for the Extrinsic-EJ task using stardard method.

Discussion

.1 Removal of long parallel sentences

We sometimes found that poor or wrong phrase tables caused long parallel sentences in training data. So, we removed these long parallel sentences. This method is effective for the Intrinsic-JE task. However, this method is not so effective for the Intrinsic-EJ tasks.

But, we had many experimental results for many parameters. And in many cases, this proposed method was effective.

.2 Size of trainig parallel corpus

In this study, the amount of training parallel corpus was too large for us. So, we have a lot of time and a lot of memory to make a phrase-table. We had no time to optimize many parameters. If we have much times or memories, we would have been able to obtain a higher BLEU sore.

Our system was average performance for NTCIR-7 Patent Translation task. Our system was the 20th place in 34 system for Intrinsic-JE task and the 12th place in 20 system for Intrinsic-EJ task. So we will improve many points to get better score.

.3 Analysis of Outputs

We analyzed the outputs of our statistical machine translation. Single sentences provided better results with few or no errors. Long sentences such as complex or compound sentences were difficult to translate. Long sentences seemed completely wrong. We must survey why they occurred in future work.

. Statistical Example Based Translation

Our system was a standard statistical machine translation system and we used long phrase tables. Thus, our system was very similar to an example based translation method , and we called our method a statistical example based translation. We believe statistical example based translation may be the better solution for Japanese-English translation.

Conclusions

We sometimes found such a wrong or poor phrase tables causes long parallel sentences in training data. So, we removed these long parallel sentences. We used standard statistical machine translation tools, such as ”Moses”[5] and ”GIZA++”[4] for our statistical machine translation systems.

We obtained a BLEU score of 0.2229 of the Intrinsic-JE task and 0.2393 of the Intrinsic-EJ taskfor our proposed method. On the other hand, we obtained a BLEU score of 0.2162 of the Intrinsic-JE task and 0.2533 of the Intrinsic-EJ task for a standard method. It means that our proposed method was effective for the Intrinsic-JE task. However, this method was not so effective for Intrinsic-EJ task.

Our system had average performance. For example, our system was the 20th place in 34 system for Intrinsic-JE task and the 12th place in 20 system for Intrinsic-EJ task. We did not optimize these parameters or did not use the reordering model. For future experiments, we will optimize these parameters and may be add a structure information, which will enable our system to perform better.

7 Acknowledgements

We thank for the students of Tottori University for their valuable works.

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[6] training-release-1.3.tgz, http://www.statmt.org/wmt06/shared-task/baseline.html

[7] SRILM, The SRI Language Modeling Toolkit, http://www.speech.sri.com/projects/srilm/

Table 8. Examples for Intrinsic-JE proposed

01	in	図５は回転羽根２を駆動するモータの構成例を示す図である。
	out	FIG. 5 is a diagram showing an example of the configuration of a motor for driving the rotary blade 3.
	cor	G. 5 is a diagram showing a structural example of a motor for driving the rotating blade 2.
02	in	さらに、心線ワイヤ５１の先端部がラミネートフィルム５９により挟まれて保持され、その変形、ピッチの狂いを防止する。
	out	Further, the leading end portion of the core wire 51, and held in the modification of the pitch deviation between the laminated film adhering 59 can be prevented.
	cor	Moreover, the front ends of the core wires 51 are sandwiched with laminated films 59 to prevent deformation of the core wires 51 for the purpose of maintaining their relative positions intact.
03	in	この絶縁ハウジング１０の外面に取り付けられるシールドカバー３０を図６に示している。
	out	The insulating housing 10 is mounted to an outer surface of the shield cover 30 shown in FIG. 6.
	cor	FIG. 6 shows the shield cover 30, which is to be mounted on the insulative housing 10.
04	in	また、この開放部の後側における雌コンタクト２０の基部２１と前後に一致する位置に、多数の前ケーブル支持溝１２が幅方向に並ぶとともに上方に開放して形成されている。
	out	On the other hand, the open portion 20 of the female contacts the rear side of the base section 21, a plurality of recesses 12 are arranged in the direction of width and opened upward is formed at a position corresponding to the front and back and forth in the cable support.
	cor	Also, behind the openings of the contact insertion slots 11 at the positions which corresponds to the base portions 21 of the female contacts 20 in the direction of the front and rear of the cable connector (hereinafter referred to as ”axial direction”), a plurality of front cable support recesses 12 are provided aligned in the width direction and opening upward.
05	in	このとき、各同軸ケーブル５０における心線ワイヤ５１は図１０に示すように雌コンタクト２０の基部２１の上に載置され、内側絶縁被覆層５２は前ケーブル支持溝１２内に入り込み、挟持板５５は後中央溝１３内に入り込み、導電性シールド層５３および外側絶縁被覆層５４は後ケーブル支持溝１４内に入り込む。
	out	At this time, the core wire 51 of the base portion 21 of the cable support grooves 13, and the conductive shielding layer 53 and the outer insulating cover layer 54 is then inserted into the cable support plate 55 is inserted in the holding groove 12 before the inner insulating cover layer 52 is mounted on the female contacts 20 in a coaxial cable 50, as shown in FIG. 10, are inserted in the central groove 14.
	cor	In this mounting, the core wires 51 of the coaxial cables 50 are positioned on the base portions 21 of the female contacts 20, the inner insulating layers 52 of the coaxial cables 50 are positioned in the front cable support recesses 12 of the insulative housing 10, the binding plates 55 are positioned in the rear central groove 13 of the housing 10, and the exposed shielding layers 53 and outer insulating layers 54 of the coaxial cables 50 are positioned in the rear cable support recesses 14 of the housing 10 as shown in FIG. 10.

in: input out:output cor: correct

Table 9. Examples for Intrinsic-JE standard

01	in	図５は回転羽根２を駆動するモータの構成例を示す図である。
	out	The rotator 2 driven by a motor structure shown in FIG. 5.
	cor	G. 5 is a diagram showing a structural example of a motor for driving the rotating blade 2.
02	in	さらに、心線ワイヤ５１の先端部がラミネートフィルム５９により挟まれて保持され、その変形、ピッチの狂いを防止する。
	out	Further, a distal end portion of the core wire 51 is clamped and held by the pitch deviation of the laminated film 59, the deformation is prevented.
	cor	Moreover, the front ends of the core wires 51 are sandwiched with laminated films 59 to prevent deformation of the core wires 51 for the purpose of maintaining their relative positions intact.
03	in	この絶縁ハウジング１０の外面に取り付けられるシールドカバー３０を図６に示している。
	out	The insulating housing 10 attached to the outer surface of the shield cover 30 is shown in FIG. 6.
	cor	FIG. 6 shows the shield cover 30, which is to be mounted on the insulative housing 10.
04	in	また、この開放部の後側における雌コンタクト２０の基部２１と前後に一致する位置に、多数の前ケーブル支持溝１２が幅方向に並ぶとともに上方に開放して形成されている。
	out	Further, the open portion 20 of the female contacts the rear side of the base 21, and a plurality of recesses 12 are arranged along and above the opening width prior to correspond cable support.
	cor	Also, behind the openings of the contact insertion slots 11 at the positions which corresponds to the base portions 21 of the female contacts 20 in the direction of the front and rear of the cable connector (hereinafter referred to as ”axial direction”), a plurality of front cable support recesses 12 are provided aligned in the width direction and opening upward.
05	in	このとき、各同軸ケーブル５０における心線ワイヤ５１は図１０に示すように雌コンタクト２０の基部２１の上に載置され、内側絶縁被覆層５２は前ケーブル支持溝１２内に入り込み、挟持板５５は後中央溝１３内に入り込み、導電性シールド層５３および外側絶縁被覆層５４は後ケーブル支持溝１４内に入り込む。
	out	At this time, the core wire 51 of the coaxial cable 50 of the base portion 21 of the cable support plate 55 is inserted into the holding groove 13 after a central shield layers 53 and 54 then enter the cable support groove 14 is inserted into the groove 12 before the inner insulating cover 20 as shown in FIG. 10 is a female contact layer 52 is mounted on the outer conductive layer insulation coating.
	cor	In this mounting, the core wires 51 of the coaxial cables 50 are positioned on the base portions 21 of the female contacts 20, the inner insulating layers 52 of the coaxial cables 50 are positioned in the front cable support recesses 12 of the insulative housing 10, the binding plates 55 are positioned in the rear central groove 13 of the housing 10, and the exposed shielding layers 53 and outer insulating layers 54 of the coaxial cables 50 are positioned in the rear cable support recesses 14 of the housing 10 as shown in FIG. 10.

in: input out:output cor: correct

Table 10. Examples for Intrinsic-EJ proposed

01	in	G. 5 is a diagram showing a structural example of a motor for driving the rotating blade 2.
	out	図５は、モータを駆動するための回転刃２の一構成例を示す図である。
	cor	図５は回転羽根２を駆動するモータの構成例を示す図である。
02	in	Moreover, the front ends of the core wires 51 are sandwiched with laminated films 59 to prevent deformation of the core wires 51 for the purpose of maintaining their relative positions intact.
	out	また、芯線５９の変形を防止するようにして積層膜５１の位置関係を維持するためには、そのままの芯線５１の先端が挟持されている。
	cor	さらに、心線ワイヤ５１の先端部がラミネートフィルム５９により挟まれて保持され、その変形、ピッチの狂いを防止する。
03	in	FIG. 6 shows the shield cover 30, which is to be mounted on the insulative housing 10.
	out	また、図６に示すように、シールドカバー３０には、絶縁ハウジング１０に搭載される。
	cor	この絶縁ハウジング１０の外面に取り付けられるシールドカバー３０を図６に示している。
04	in	Also, behind the openings of the contact insertion slots 11 at the positions which corresponds to the base portions 21 of the female contacts 20 in the direction of the front and rear of the cable connector (hereinafter referred to as ”axial direction”), a plurality of front cable support recesses 12 are provided aligned in the width direction and opening upward.
	out	また、接触子挿入口１１の開口部２１の雌端子２０の電線接続部（以下、「前」という）には、複数のケーブル保持体軸方向に配向される。上方に開口溝１２が形成されている方向及び幅方向の前後に対応する位置にベース部の後方には、
	cor	また、この開放部の後側における雌コンタクト２０の基部２１と前後に一致する位置に、多数の前ケーブル支持溝１２が幅方向に並ぶとともに上方に開放して形成されている。
05	in	In this mounting, the core wires 51 of the coaxial cables 50 are positioned on the base portions 21 of the female contacts 20, the inner insulating layers 52 of the coaxial cables 50 are positioned in the front cable support recesses 12 of the insulative housing 10, the binding plates 55 are positioned in the rear central groove 13 of the housing 10, and the exposed shielding layers 53 and outer insulating layers 54 of the coaxial cables 50 are positioned in the rear cable support recesses 14 of the housing 10 as shown in FIG. 10.
	out	この取付ベース２０の前面側にはシールド層５３、５４、５５が固定されている絶縁ハウジング１０は、結合凹部１２内には、雌端子５２に同軸ケーブル５０の中心孔１３が露出された絶縁層５０が配置されている同軸ケーブル保持体１５の外周側には、ハウジング１０の図１０に示すように、ハウジング１０の支持部２１の同軸ケーブル５０は、芯線５１の上に位置する絶縁層が配置されているケーブル部材凹部である。
	cor	このとき、各同軸ケーブル５０における心線ワイヤ５１は図１０に示すように雌コンタクト２０の基部２１の上に載置され、内側絶縁被覆層５２は前ケーブル支持溝１２内に入り込み、挟持板５５は後中央溝１３内に入り込み、導電性シールド層５３および外側絶縁被覆層５４は後ケーブル支持溝１４内に入り込む。

in: input out:output cor: correct

Table 11. Examples for Intrinsic-EJ standard

01	in	G. 5 is a diagram showing a structural example of a motor for driving the rotating blade 2.
	out	図５は、第１の実施例による駆動するためのモータ回転翼２の構成例である。
	cor	図５は回転羽根２を駆動するモータの構成例を示す図である。
02	in	Moreover, the front ends of the core wires 51 are sandwiched with laminated films 59 to prevent deformation of the core wires 51 for the purpose of maintaining their relative positions intact.
	out	また、先端の芯線５１に挟持されて積層膜５９の変形を阻止して芯線５１の位置を維持するためそのまま保存される。
	cor	さらに、心線ワイヤ５１の先端部がラミネートフィルム５９により挟まれて保持され、その変形、ピッチの狂いを防止する。
03	in	FIG. 6 shows the shield cover 30, which is to be mounted on the insulative housing 10.
	out	図６には、シールドカバーであり、１０は絶縁ハウジング３０が装着されるようになっている。
	cor	この絶縁ハウジング１０の外面に取り付けられるシールドカバー３０を図６に示している。
04	in	Also, behind the openings of the contact insertion slots 11 at the positions which corresponds to the base portions 21 of the female contacts 20 in the direction of the front and rear of the cable connector (hereinafter referred to as ”axial direction”), a plurality of front cable support recesses 12 are provided aligned in the width direction and opening upward.
	out	また、後方接続部２０の雌端子２１の挿入口１１の開口位置に対応した軸方向の前後のコネクタ（以下、複数のケーブル保持体軸方向前方とその幅方向に沿って上方に開口溝１２が形成されている。
	cor	また、この開放部の後側における雌コンタクト２０の基部２１と前後に一致する位置に、多数の前ケーブル支持溝１２が幅方向に並ぶとともに上方に開放して形成されている。
05	in	In this mounting, the core wires 51 of the coaxial cables 50 are positioned on the base portions 21 of the female contacts 20, the inner insulating layers 52 of the coaxial cables 50 are positioned in the front cable support recesses 12 of the insulative housing 10, the binding plates 55 are positioned in the rear central groove 13 of the housing 10, and the exposed shielding layers 53 and outer insulating layers 54 of the coaxial cables 50 are positioned in the rear cable support recesses 14 of the housing 10 as shown in FIG. 10.
	out	同軸ケーブル５０のベース部２１内には、絶縁膜５２、５３、５４、５５は絶縁ハウジング１０は、結合凹部１２の中央部に位置する絶縁層５０が配置されており、図１７に示されるように、ハウジング１０の後端に同軸ケーブルの外筐体１０の後部に配置されているので、同軸ケーブルの先端の雌コンタクト２０が配置されており、この取付の芯線５１上に、５０は電線支持孔１３から露出したシールド層とケーブル支持溝１４
	cor	このとき、各同軸ケーブル５０における心線ワイヤ５１は図１０に示すように雌コンタクト２０の基部２１の上に載置され、内側絶縁被覆層５２は前ケーブル支持溝１２内に入り込み、挟持板５５は後中央溝１３内に入り込み、導電性シールド層５３および外側絶縁被覆層５４は後ケーブル支持溝１４内に入り込む。

in: input out:output cor: correct

Table 12. Examples for Extrinsic-EJ standard

01	in	A milk-derived calcium-containing composition comprising an inorganic salt mainly composed of calcium obtained by baking a milk-derived prepared matter containing milk casein-bonding calcium and/or colloidal calcium.
	out	この焼成物を含有しない炭酸カルシウムを主成分としたｍｉｌｋ－ｄｅｒｉｖｅｄｃａｌｃｉｕｍ－ｃｏｎｔａｉｎｉｎｇ無機塩類組成物ｍｉｌｋ－ｄｅｒｉｖｅｄｃａｓｅｉｎ－ｂｏｎｄｉｎｇカルシウムやコロイド状である。
02	in	An objective lens driving device comprising a movable part including a bobbin with a focusing coil and a tracking coil, and a fixed part including a magnet, the bobbin being formed in a cylindrical shape having two pairs of hooks on peripheral parts formed at the upper and lower ends thereof; the focusing coil being wound in a winding part between the peripheral parts, while winding the tracking coil on the two pairs of hooks to be arranged on the focusing coil, and a focusing coil different from the focusing coil being further wound on the bobbin from above the tracking coil, whereby the center of gravity of the movable part, the center point of a composed force generated by the focusing coil, and the center point of a composed force generated by the tracking coil are mutually matched.
	out	この対物レンズ駆動装置を含む可動部を有する円筒状に形成されており、このフォーカスコイル巻線が巻回されており、トラッキング用コイルとフォーカシング用コイルがボビンに巻回されたフォーカスコイル、トラッキングコイルの発生する力は、フォーカシング用コイル及びトラッキング用コイルが互いに一致する。力により合成され、これにより異なるので、各一対の爪部の周辺部には、上下方向に巻き掛けて構成されており、フォーカスコイルおよびトラッキングコイルボビン固定部からなる磁石、ボビン２対の周辺部に配置する、フォーカシングコイル１の重心位置の中心部には、可動上から
03	in	An improved production method of sake by liquefying fermentation, comprising adding an enzyme containing α-glucosidase as an effective component at the time of charging and/or fermenting mold rice to promote the fermentation of the mold rice.
	out	以下の説明では、液化する製造方法＞α、－ｇｌｕｃｏｓｉｄａｓｅ酵素を有効成分とすることを促進させるという効果やモールド金型の発酵砕米充電時の発酵を添加する。
04	in	A television camera device comprising a plurality of television cameras, each of which is connected to a power supply device through one coaxial cable for every camera for imposing and multiplex-transmitting power and signal, so that electricity is supplied from the power supply device to the camera, and video output of the camera is externally outputted from the power supply device, the power supply device including an external synchronous imposing part for transmitting a vertical synchronizing signal of external synchronization and a field identification signal to the camera through the cable; and the camera including a signal separation part for separating and extracting the vertical synchronizing signal and field identification signal of the cable, and a timing part for controlling vertical synchronization and field synchronization by the vertical synchronizing signal and the field identification signal.
	out	複数の装置から印加することにより、電源を供給する電源装置により、カメラの電源が投入されると、カメラは、カメラ外部同期信号に同期して、垂直同期信号、垂直同期信号、垂直同期信号のタイミング制御を行う部分とを分離して抽出フィールド判別信号を伝送するための垂直同期信号に同期して、電源装置を外部装置から外部へ出力されるカメラの出力ビデオ信号とｍｕｌｔｉｐｌｅｘ－ｔｒａｎｓｍｉｔｔｉｎｇ毎に１本の同軸ケーブルを介して接続された電源装置をテレビカメラのカメラ用であり、領域分割部であり、フィールド・フィールド判別信号ケーブルケーブル、識別部はテレビカメラ

in: input out:output