Applying the Akoma Ntoso XML Schema to Japanese Legislation

KAWACHI Gen*, NAKAMURA Makoto, OGAWA Yasuhiro, OHNO Tomohiro, TOYAMA Katsuhiko

Nagoya University, Japan
Agenda

1. Current situation of legal information in Japan
   • Rigid schema for structured Japanese statutes
   • Strict description rules of Japanese statutes
2. Ambiguity in Akoma Ntoso annotation
3. An approach to avoid ambiguity
4. Restriction on Akoma Ntoso annotation
5. Conclusion
Global dissemination of legal information

Japanese Law Translation Database System (JLT)

- Since 2009
  - By the government
- Offers some Japanese statutes in English
  - To promote international transaction
  - To support nonnatives under Japanese laws
- Offers 552 Statutes*

*As of October 28, 2015
Statutes as open data

e-LAWS
(e-Legislative Activity and Work Support System)

• Will be launched in October, 2016
  • By the government

• Supports Public officers
  • To write amendment laws
  • To publish enacted laws

• Offers all the Japanese statutes to the public
  • In the form of machine-readable, structured documents
  • To develop systems to access/utilize the statutes
Structured statutory documents
in JLT and e-LAWS

• Written in XML

• Use cases
  • JLT: display English/Japanese provisions in various layouts
  • e-LAWS: automatically generate provisions of amendment law

• Follow a schema designed for Japanese statutes

Japanese Statutory
Schema (JSS)

<table>
<thead>
<tr>
<th>労働時間等の設定の改善に関する特別措置法</th>
<th>Act on Special Measures for Improvement of Working Hours Arrangements</th>
</tr>
</thead>
<tbody>
<tr>
<td>平成四年七月二日法律第九十号</td>
<td>Act No. 90 of July 2, 1992</td>
</tr>
<tr>
<td>第一章 総則</td>
<td>Chapter I General Provisions</td>
</tr>
<tr>
<td>(目的)</td>
<td>(Purpose)</td>
</tr>
<tr>
<td>第一条 この法律は、我が国における労働時間等の現状及び動向にかんがい、労働時間平等確保等の目的を達成するため、労働者等の利益を促進するための特別の措置を講ずることにより、労働者の健康を守ることを目的とする。</td>
<td>Article 1 The purpose of this Act is to enable workers to effectively exercise their abilities by establishing guidelines on the improvement of working hour arrangements, and by implementing special measures for promoting the independent efforts of businesses toward the improvement of working hour arrangements in consideration of the actual conditions and trends in working hours in Japan, thereby contributing to a healthy and fulfilling life for workers and solid growth of the national economy.</td>
</tr>
</tbody>
</table>

Article 1.2 (1) The term "Working Hours, etc." as used in this Act means working hours, days off and national holidays, and leave such as annual paid leave (meaning annual paid leave granted pursuant to the provisions of Article 75 of the...
Strict annotation rules in JSS

• 104 elements
  • Defined to be used only for Japanese statutes

• Based on a thorough study of Japanese statutes

Appropriate annotation without ambiguity
Manuals for Japanese legislation

Describes
• Literary styles for accurate expression
• Structure/format
• Usage of letters/words
Strict description rules of Japanese statutes

(1) The term "Banking" as used in this Act means commercial pursuits carried out through any of the following acts:

(i) Acceptance of deposits or Installment Savings, in addition to loans of funds, or the discounting of bills and notes; or

(ii) Carrying out exchange transactions.

Controlled by
The Cabinet Legislation Bureau

Law via Internet 2015, 10-11 November 2015, Sydney Australia
Typical legislation process in Japan

- Most statutes are drafted by the Cabinet
- Few numbers of bills are modified during the Diet deliberation.

The Bureau examines
- The full text
- Of most statutes

The Cabinet
Drafting legislative bills

Competent ministries

Cabinet Legislation Bureau
Submission

The Diet (Parliament)

The House of Representatives
Approval

The House of Councillors
Approval

Enactment
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Two frameworks for structured legal documents

**JSS**
- For Japanese statutes
- Based on strict description rules of Japanese statutes
- Correct annotation without ambiguity

**Akoma Ntoso**
- Used by many countries/organizations
- For various kinds of legal documents
  - Laws, bills, debate records...
- International standard
  - LegalDocML: by OASIS Formulated based on Akoma Ntoso
Purpose

To generate structured Japanese statutes in Akoma Ntoso
→ Make it easier to share/utilize Japanese legal information

Problem of Akoma Ntoso
Risk for ambiguity in annotation
Problem 1: Akoma Ntoso is TOO FLEXIBLE

- Defines 310 elements
- Minimum restriction about usage of the elements
  - To support various legal documents

Structural flexibility

Ambiguity in annotation
(Definitions, etc.)

Article 2

(1) The term "Bank" as used in this Act means a person who engages in Banking under the license from the Prime Minister prescribed in Article 4, paragraph (1).

(2) The term "Banking" as used in this Act means commercial pursuits carried out through any of the following acts:

(i) Acceptance of deposits or Installment Savings, in addition to loans of funds, or the discounting of bills and notes; or

(ii) Carrying out exchange transactions.

Banking Act (Act No. 59 of 1981)
(Definitions, etc.)

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Banking Act (Act No. 59 of 1981)
Flexibility of the annotation to the hierarchical structure

• 26 elements to describe hierarchical structure
• No restriction on their hierarchical orders
Inconsistent annotation of amendment acts

Kenya act
(from the website of Akoma Ntoso)

7. Section 50 of the principal act is amended -

(a) by deleting subsection (2) and inserting the following –

(2) Where anything other than a trophy is seized and detained under section 49 of this Act it shall be forfeited to...

UK act
(from the repository of OASIS)

(2) In section 11 (implementation of interception warrants), after subsection (2) insert—

“(2A) A copy of a warrant may be served under subsection (2) on a person outside the United Kingdom (and ...
Annotation for Kenya act

<content>
<blockList id="sec7-lst1">
  <listIntroduction>Section ... is amended -</listIntroduction>
  <item id="sec7-lst1-itma">
    <num>(a)</num>
    <p>by deleting subsection (2) and inserting the following -</p>
    <mod id="mod1">
      <quotedStructure id="mod1-qtd1">
        <subsection id="mod1-qtd1-sub2">
          ...
        </subsection>
      </quotedStructure>
    </mod>
  </item>
</blockList>
</content>

Annotation for UK act

<content>
<p>In section 11 (implementation of interception warrants), after subsection (2) insert -</p>
<mod eId="mod_1">
  <quotedStructure eId="qstr_1">
    <subsection eId="mod_1__sec_11__subsec_2A">
      ...
    </subsection>
  </quotedStructure>
</mod>
</content>

Lack of in detail illustration about the usage
Insufficient information

Specification of LegalDocML

• Published by OASIS
• Describes roles, children, attributes, etc.
• Lacks illustration/examples

It is hard to determine which text strings should be annotated with each tag.
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How to avoid losing consistency in annotation

• Need for a rigid policy for annotation
• For stable annotation
  • Of all the statutes
  • At any time
  • By anybody

Convert JSS documents into Akoma Ntoso documents
Generation of structured Japanese statutes in Akoma Ntoso

1. Automatic JSS annotator
   • Already exists
   • Used for JLT

2. Akoma Ntoso converter
   • Replaces names/attributes of elements
   • Recomposes some structure
Example of conversion (1)

JSS

Akoma Ntoso

Replace names of elements
Example of conversion (2)

Example of conversion (2)

<Paragraph Num="1">
  <ParagraphNum>(1)</ParagraphNum>
  <ParagraphSentence>
    <Sentence>Employers must endeavor ... annual paid leave.</Sentence>
  </ParagraphSentence>
</Paragraph>

<paragraph eId="chp1-art2-par1">
  <heading>(1)</heading>
  <content>
    <p class="ParagraphSentence">
      <inline name="Sentence">
        Employers must endeavor ... annual paid leave.
      </inline>
    </p>
  </content>
</paragraph>

Insert <content>
Add attributes of names of JSS elements

Law via Internet 2015, 10-11 November 2015, Sydney Australia
Establishing conversion rules

- Determined 84 conversion rules for 67 JSS elements
- Rules for 37 elements under consideration.

For supplements, contents of amendment acts, etc...

<table>
<thead>
<tr>
<th>JSS</th>
<th>Akoma Ntoso</th>
<th>eld</th>
<th>level</th>
<th>class</th>
<th>name</th>
<th>Other attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Law</td>
<td>akomaNtoso/act</td>
<td></td>
<td></td>
<td></td>
<td>[name of the statute]@act</td>
<td>PromulgateStatement@container</td>
</tr>
<tr>
<td>PromulgateStatement</td>
<td>preface/container</td>
<td></td>
<td></td>
<td></td>
<td>PromulgateStatement@container</td>
<td></td>
</tr>
<tr>
<td>LawNum</td>
<td>p/docNumber</td>
<td></td>
<td></td>
<td></td>
<td>LawrenceNum@p</td>
<td></td>
</tr>
<tr>
<td>LawBody</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signature</td>
<td>p/signature</td>
<td></td>
<td></td>
<td></td>
<td>Signature@p</td>
<td></td>
</tr>
<tr>
<td>MinisterialTitle</td>
<td>role</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>person</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>PromulgateBody</td>
<td>p</td>
<td></td>
<td></td>
<td></td>
<td>PromulgateBody</td>
<td></td>
</tr>
<tr>
<td>ImperialSignature</td>
<td>p/signature</td>
<td></td>
<td></td>
<td></td>
<td>ImperialSignature@p</td>
<td></td>
</tr>
<tr>
<td>PromulgateDate</td>
<td>p/docDate</td>
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<td></td>
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</tr>
<tr>
<td>LawTitle</td>
<td>preface/p/docTitle</td>
<td></td>
<td></td>
<td></td>
<td>LawTitle@p</td>
<td></td>
</tr>
<tr>
<td>EnactStatement</td>
<td>p</td>
<td></td>
<td></td>
<td></td>
<td>EnactStatement</td>
<td></td>
</tr>
<tr>
<td>Preamble</td>
<td>preamble/recitals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MainProvision</td>
<td>body</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SupplProvision</td>
<td>hcontainer</td>
<td>sup</td>
<td></td>
<td></td>
<td>SupplProvision</td>
<td>jp:amendLawNum=[amendLawNum]</td>
</tr>
<tr>
<td>Preamble/Paragraph</td>
<td>recital</td>
<td>pam</td>
<td></td>
<td></td>
<td></td>
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Problem 2: Restriction on Akoma Ntoso

• The design of Akoma Ntoso does not reflect the styles peculiar to Japanese statutes.
Restriction on Akoma Ntoso prevents natural annotation

Desirable annotation:

```xml
<Article num="2">
  <heading>(Definitions, etc.)</heading>
  <num>Article 2</num>
  ...
</Article>
```

Unnatural annotation:

```xml
<num>(Definitions, etc.)</num>
```

This problem cannot be solved
Conclusion

Problems of Akoma Ntoso annotation
  • Structural flexibility $\Rightarrow$ Risk for ambiguity in annotation

Approach to solve the problem
  • Make use of a rigid schema designed for a specific domain
  • Example: JSS in Japan

Current work

Polishing up the conversion rules
  • For amendment laws

Implementing the JSS to Akoma Ntoso converter