# Applying the Akoma Ntoso XML Schema to Japanese Legislation

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# 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)**

| 労働時間等の設定の改善に関する特別措置法 | Act on Special Measures for Improvement of Working Hours Arrangements |
|---|---|
| 平成四年七月二日法律第九十号 | Act No. 90 of July 2, 1992 |
| 第一章　総則 | Chapter I General Provisions |
| （目的） | (Purpose) |
| 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み、労働時間等設定改善指針を策定するとともに、事業主等による労働時間等の設定の改善に向けた自主的な努力を促進するための特別の措置を講ずることにより、労働者がその有する能力を有効に発揮することができるようにし、もって労働者の健康で充実した生活の実現と国民経済の健全な発展に資することを目的とする。 | 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 of and trends in working hours in Japan, thereby contributing to a healthy and fulfilling life for workers and solid growth of the national economy. |
| （定義） | (Definitions) |
| 第一条の二　この法律において「労働時間等」とは、労働時間、休日及び年次有給休暇（労働基準法（昭和二十二年法律第四十九号）第三十九条の規定による年次有給休暇として与えられるものをいう。以下同じ。）その他の休暇をいう。 | 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 39 of the |

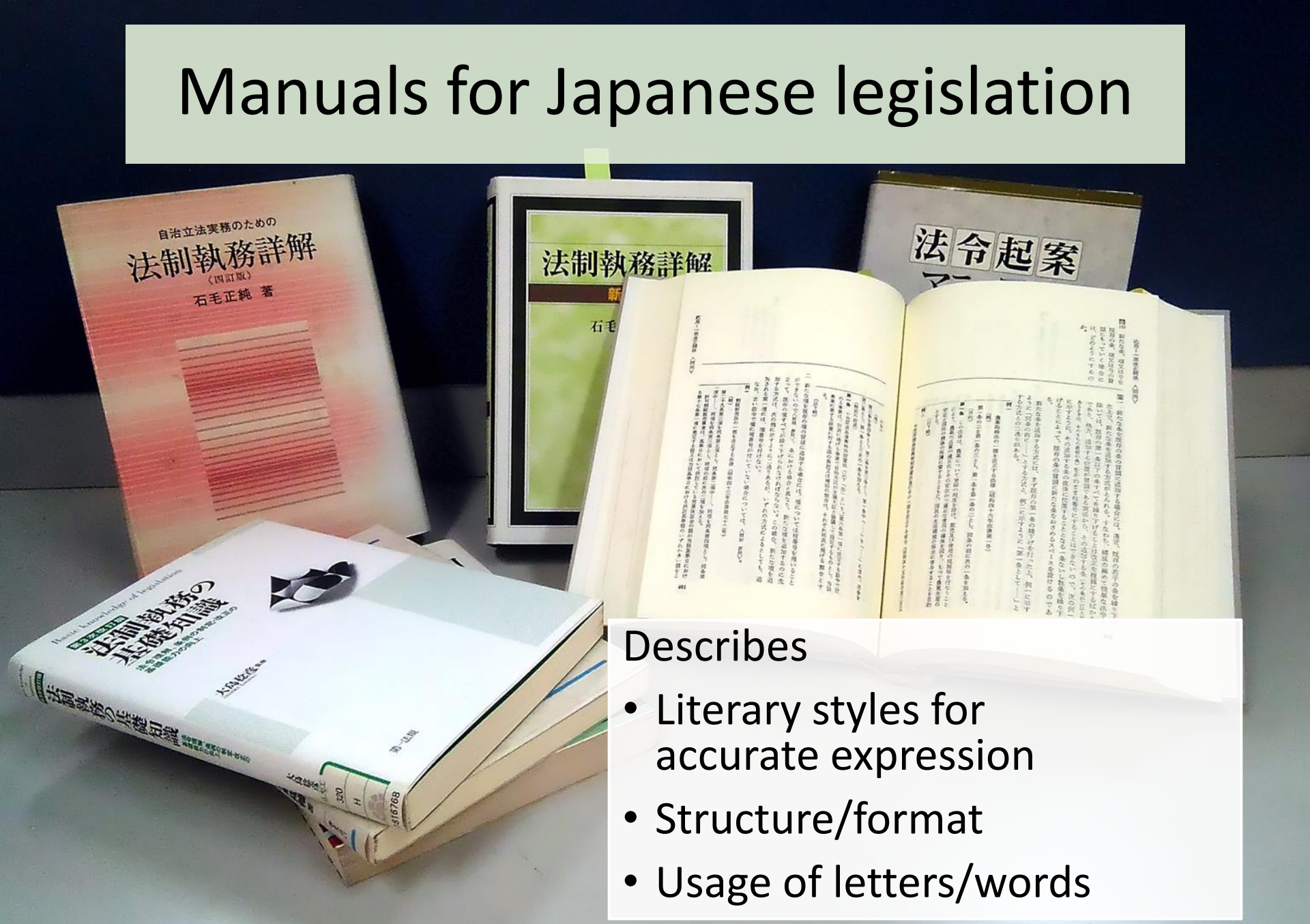
# Strict annotation rules in JSS

- 104 elements
  - Defined to be used only for Japanese statutes
- Based on a thorough study of Japanese statutes

**Appropriate annotation without ambiguity**

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE Law PUBLIC "-//JaLII//DTD J-STATU
<Law OriginalPromulgateDate="July 2, 1992"
  <LawNum>Act No. 90 of July 2, 1992</LawNu
  <LawBody>
    <LawTitle>Act on Special Measures for I
    <MainProvision>
      <Chapter Num="1">
        <ChapterTitle>Chapter I General Pro
        <Article Num="1">
          <ArticleCaption>(Purpose)</Articl
          <ArticleTitle>Article 1</ArticleT
          <Paragraph Num="1">
            <ParagraphNum />
            <ParagraphSentence>
              <Sentence>The purpose of this
            </ParagraphSentence>
          </Paragraph>
        </Article>
        <Article Num="1_2">
          <ArticleCaption>(Definitions)</Ar
```

# Manuals for Japanese legislation




Describes

- Literary styles for accurate expression
- Structure/format
- Usage of letters/words

# Strict description rules of Japanese statutes

Width of indentation

Document structure

[Article]⇨[Paragraph]⇨[Item]

(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.

Typefaces of numbers

(1) -------
(i) -----
(a) ---

Controlled by

The Cabinet Legislation Bureau

# Typical legislation process in Japan

Examines the draft written by the Cabinet

- 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)

# Candidate 1

(Definitions, etc.)
Article 2

<article>

(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).

<list>

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

<list>

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

<subList>

(ii) Carrying out exchange transactions.

<subList>

Banking Act (Act No. 59 of 1981)

# Candidate 2

(Definitions, etc.)
Article 2

<article>

(1) The term "Bank" as used in this Act means a person who enga under the license from the Prime M bed in Article 4, paragraph (1).

<paragraph>

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

<paragraph>

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

<subparagraph>

(ii) Carrying out ctions.

<subparagraph>

Banking Act (Act No. 59 of 1981)

# Candidate 3

(Definitions, etc.)
Article 2

<chapter>

(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).

<subparagraph>

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

<subparagraph>

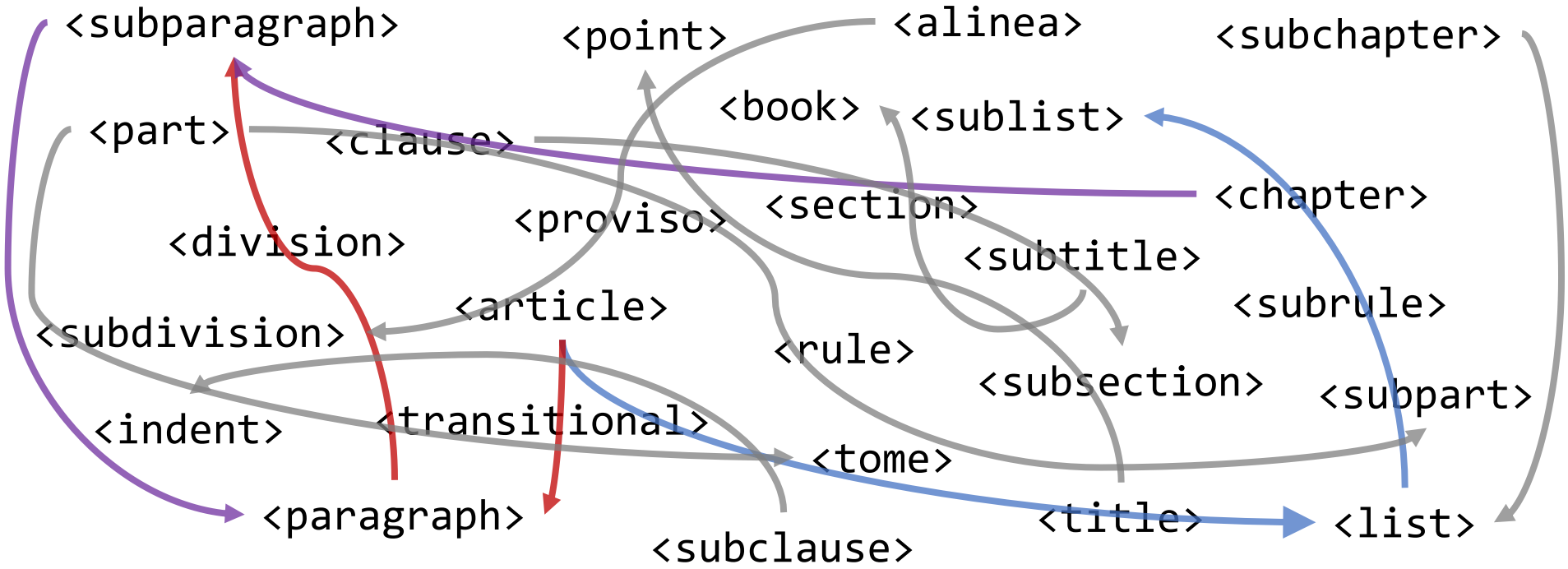
(i) Acceptance of deposits or Installment Savings, in addition to <paragraph> or the discounting of bills and notes; or

(ii) Carrying out <paragraph> actions.

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 …

Instructions to insert new provisions

## 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
    <mod id="mod1">
     subsection (2) and inserting the following -
     <quotedStructure id="mod1-qtd1">
      <subsection id="mod1-qtd1-sub2">

       …

      </subsection>
     </quotedStructure>
    </mod>
   </p>
  </item>
 </blockList>
</content>
```

Inside <mod>

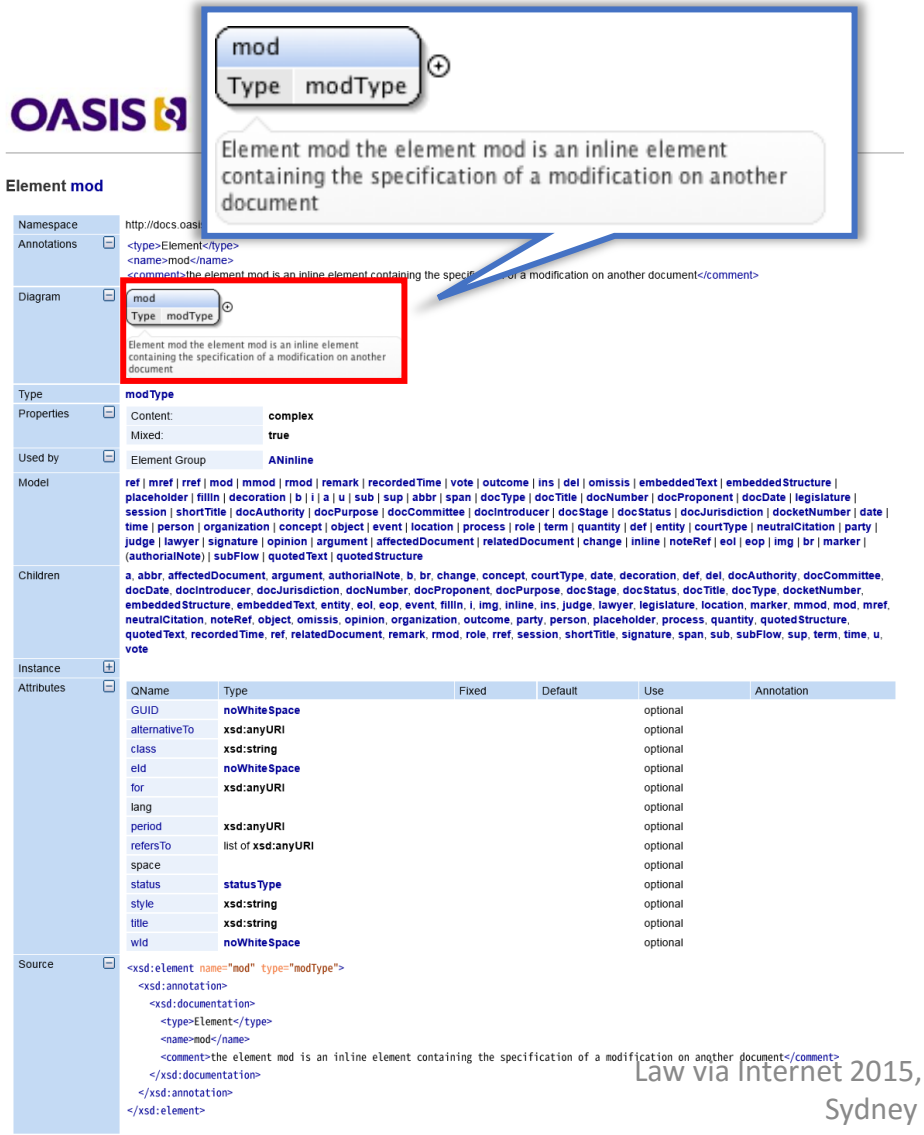
## Annotation for UK act

```
<content>
 <p>In section 11 (implementation of
  interception warrants), after subsection (2)
  insert—</p>
 <p class="BlockAmendment">
  <mod eId="mod_1">
   <quotedStruc
    <subsection
     eId="mod_1__sec_11__subsec_2A">

    …

    </subsection>
   …
   </quotedStructure>
  </mod>
 </p>
</content>
```

Outside <mod>

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

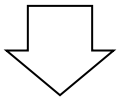
- Need for a rigid policy for annotation
- For stable annotation
  - Of all the statutes
  - At any time
  - By anybody

JSS

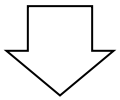
**Convert JSS documents into Akoma Ntoso documents**

# Generation of structured Japanese statutes in Akoma Ntoso

Plain text



XML
valid to JSS



XML
valid to 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)

```
<Article Num="3">
  …
  <Paragraph Num="9">
    …
    <Item Num="1">
      …
      <Subitem1 Num="1">
        …
        <Subitem1Sentence>
          …
        </Subitem1Sentence>
      </Subitem>
    </Item>
  </Paragraph>
</Article>
```

JSS

```
<article eId="art3">
  …
  <paragraph eId="art3-par9">
    …
    <subparagraph eId="art3-par9-itm1">
      …
      <subparagraph eId="art3-par9-itm1-1si1">
        …
        <content>
      </subparagraph>
    </paragraph>
  </article>
</chapter>
```

Replace names of elements

Akoma Ntoso

# Example of conversion (2)

```
<Paragraph Num="1">

 <ParagraphNum>(1)</Par
  agraphNum>

 <ParagraphSentence>
  <Sentence>Employers
   must endeavor …
   annual paid
   leave.</Sentence>
 </ParagraphSentence>

</Paragraph>
```

JSS

```
<paragraph eId="chp1-art2-
 par1">
 <heading>(1 …eading>

 <content>
  <p class="ParagraphSentence">
   <inline name="Sentence">
    Employers must endeavor …
    annual pa
    leave.
  </p>
 </content>
</paragraph>
```

Insert <content>

Add attributes
of names of JSS elements

Akoma Ntoso

# Establishing conversion rules

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

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

| JSS | Akoma Ntoso | eId | level | class | name | Other attributes |
|---|---|---|---|---|---|---|
| Law | akomaNtoso/act | | | | [name of the statute]@act | |
| PromulgateStatement | preface/container | | | | PromulgateStatement@container | |
| LawNum | p/docNumber | | | LawNum@p | | |
| LawBody | | | | | | |
| Signature | p/signature | | | Signature@p | | |
| MinisterialTitle | role | | | | | refersTo="#somtething" |
| Name | person | | | | | refersTo="#someone" |
| PromulgateBody | p | | | PromulgateBody | | |
| ImperialSignature | p/signature | | | ImperialSignature@p | | |
| PromulgateDate | p/docDate | | | | | |
| LawTitle | preface/p/docTitle | | | LawTitle@p | | |
| EnactStatement | p | | | EnactStatement | | |
| Preamble | preamble/recitals | | | | | |
| MainProvision | body | | | | | |
| SupplProvision | hcontainer | sup | | | SupplProvision | jp:amendLawNum=[amendLawNum] |
| Preamble/Paragraph | recital | pam | | | | |

⋮

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# Problem 2: Restriction on Akoma Ntoso

- The design of Akoma Ntoso does not reflect the styles peculiar to Japanese statutes.

## Unnatural annotation

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

# Restriction on Akoma Ntoso prevents natural annotation

(Definitions, etc.)

Article 2

(1) The term "B
paragraph (1).

(2) The term "Banking" as used ...
following acts:
(i) ...

Captions before their numbers

## Desirable annotation

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

**Not valid**

Validates only the order of <num> ➡ <heading>

## Unnatural annotation

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

**This problem cannot be solved**

# Conclusion

## Problems of Akoma Ntoso annotation

- Structural flexibility ⇨ 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