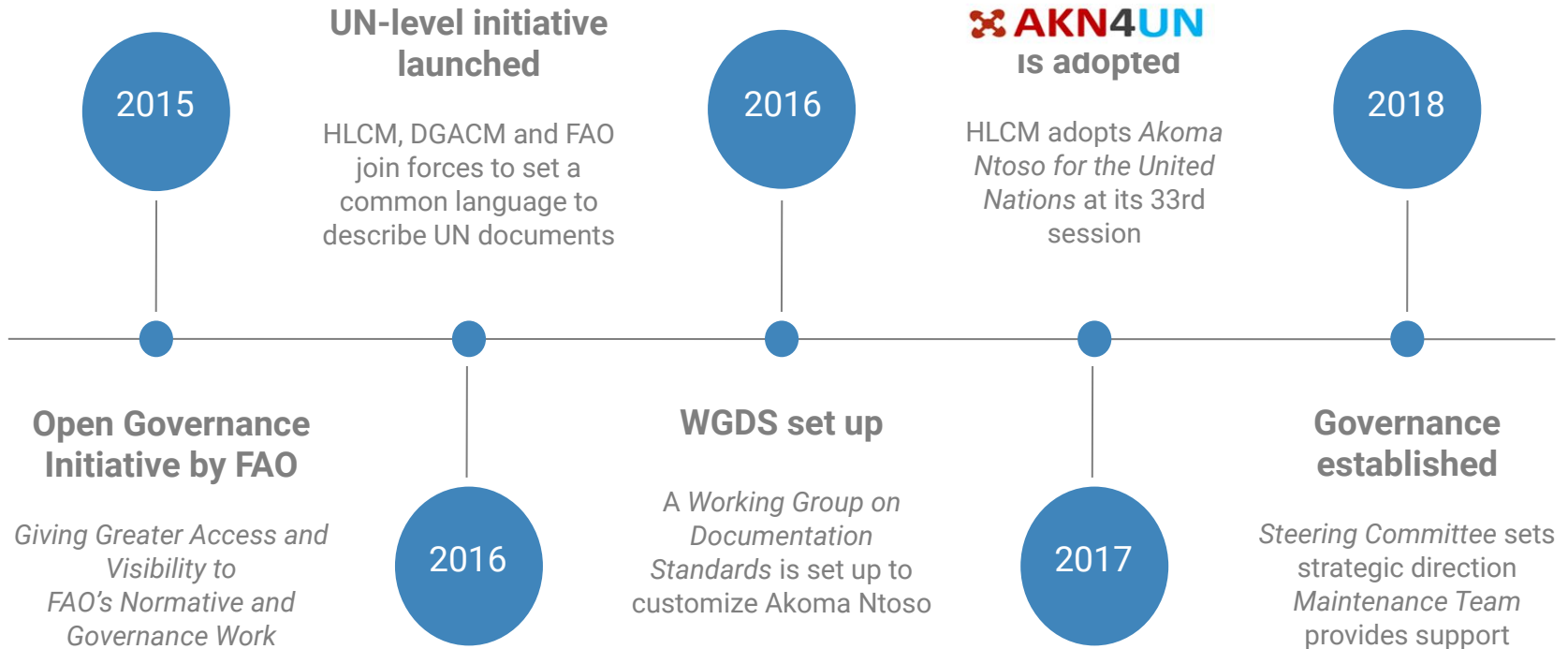# Machine readability and robot writing

Cecilia Elizalde
Department for General Assembly and Conference Management
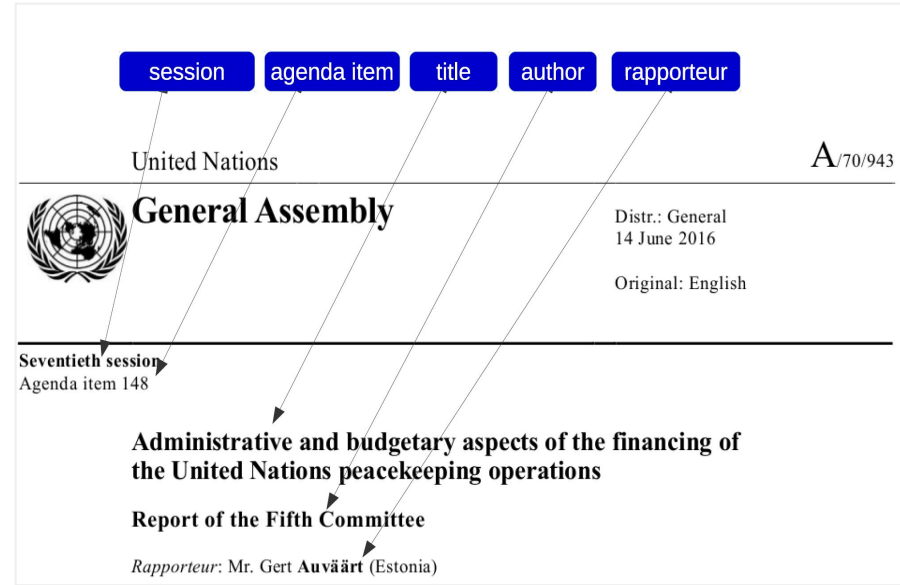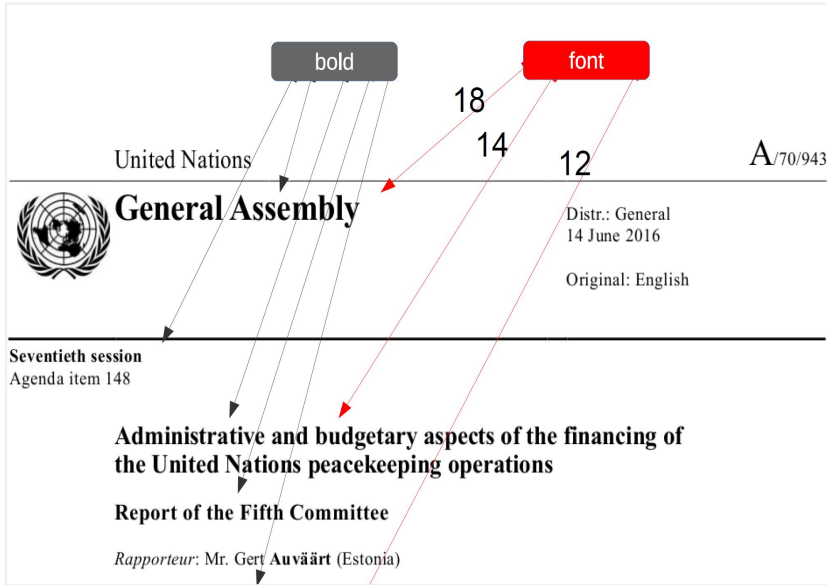**16 January 2020**

United Nations

Overview

2015

UN-level initiative launched

HLCM, DGACM and FAO join forces to set a common language to describe UN documents

2016

AKN4UN is adopted

HLCM adopts *Akoma Ntoso for the United Nations* at its 33rd session

2018

Open Governance Initiative by FAO

Giving Greater Access and Visibility to FAO's Normative and Governance Work

2016

WGDS set up

A *Working Group on Documentation Standards* is set up to customize Akoma Ntoso

2017

Governance established

Steering Committee sets strategic direction *Maintenance Team* provides support

What are we telling computers?
Limited intelligible instructions

Finding meaning in our documents
Unleashing the potential of technology

United Nations

A/RES/71/4

General Assembly

Distr.: General
17 October 2016

Seventy-first session
Agenda item 113

Resolution adopted by the General Assembly on 13 October 2016

[*without reference to a Main Committee (A/71/L.4)*]

71/4. **Appointment of the Secretary-General of the United Nations**

The General Assembly,

Recalling Chapter XV of the Charter of the United Nations, and reaffirming the role of the General Assembly under Article 97,

Welcoming the process of selection and appointment of the Secretary-General and its timely conclusion, guided by the principles of transparency and inclusivity as set out in its resolutions 69/321 of 11 September 2015 and 70/305 of 13 September 2016, including the organization of informal dialogues with all candidates for the position of Secretary-General,

Having considered the recommendation contained in Security Council resolution 2311 (2016) of 6 October 2016,

Appoints Mr. António Guterres Secretary-General of the United Nations for a term of office beginning on 1 January 2017 and ending on 31 December 2021.

27th plenary meeting
13 October 2016

`<docNumber refersTo="#symbol">A/RES/71/4</docNumber>`

`<session value="71">Seventy-first session</session>`

`<docTitle>Appointment of the Secretary-General of the United Nations</docTitle>`

`<event title="A/71/PV.27" refersTo="#plenaryMeeting27">27th plenary meeting</event>`

`<docDate date="2016-10-13" refersTo="#adoptionDate">13 October 2016</docDate>`

The benefits of XLM

Visible benefits for all stakeholders

Multichannel dissemination and system interoperability

Transparency through enriched searches and tracking

Automated formatting, data extraction, and content creation

Automating content creation

Robot writing using XML and added metadata

Combine **content and metadata from XML documents and external systems** to generate new content in the six official languages
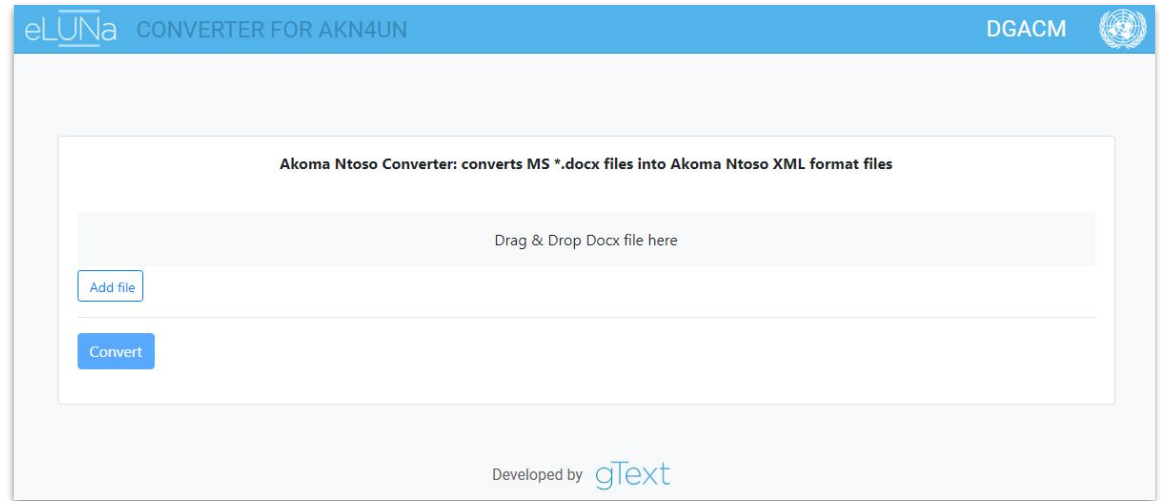
Standardize drafting to enable substitutions and set pre-translated language

eLUNa Converter

A prototype for automatic XML creation and robot writing

eLUNa converter for AKN4UN
Machine-readable GA resolutions and robot writing

○ **Converting** into XML

○ **Embedding metadata** from other systems

○ **Robot writing** of standardized content

General Assembly resolutions volume
Automatic generation of the GA book of resolutions

Until 2019:

- Colleagues compile the volume by copying and pasting text and data from emails, Word files and different applications

From 2020:

- Automatic generation of the volume through connections with external systems and robot writing

Resolutions and Decisions
adopted by the General Assembly
during its seventy-third session

Volume I
Resolutions
18 September – 22 December 2018

General Assembly
Official Records • Seventy-third Session
Supplement No. 49

United Nations • New York, 2019

Analysis of volume content type
Fixed and variable content from different sources

Data from A/RES file

External metadata

a. Sponsorship

b. Voting

Creating a resolution in XML
Structural markup and identification of semantic elements in A/RES

United Nations

General Assembly

Distr.: General
21 January 2019

A/RES/73/258

Seventy-third session
Agenda item 128 (n)

**Resolution adopted by the General Assembly
on 20 December 2018**

[*without reference to a Main Committee (A/73/L.72 and A/73/L.72/Add.1)*]

73/258.   **Cooperation between the United Nations and the Organisation
for the Prohibition of Chemical Weapons**

The General Assembly,

Recalling its resolution 71/250 of 22 December 2016 on cooperation between the United Nations and the Organisation for the Prohibition of Chemical Weapons,

Having received the annual report for 2016 and the draft report for 2017 of the Organisation for the Prohibition of Chemical Weapons on the implementation of the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction,[1]

1.   *Takes note* of the annual report for 2016 and the draft report for 2017 of the Organisation for the Prohibition of Chemical Weapons submitted on its behalf by its Director General;[1]

[...]

transmission by the Director General of 22 monthly reports, as well as all reports of the fact-finding mission, during the reporting period, and expresses appreciation for the work done in this regard;

8.   *Decides* to include in the provisional agenda of its seventy-fifth session, under the item entitled "Cooperation between the United Nations and regional and other organizations", the sub-item entitled "Cooperation between the United Nations and the Organisation for the Prohibition of Chemical Weapons".

*63rd plenary meeting
20 December 2018*

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Displaying and adjusting metadata
Editable *Show metadata* menu

Adding metadata from other systems

Several data sources

e-Votes module

e-Delegate portal

UN Library

Adding the metadata to the XML A/RES
Document workflow, sponsorship and voting

1. **Workflow**

   a. Draft resolution
   b. Submitter
   c. Additional sponsors
   d. Committee report
   e. Meeting record
   f. Adoption

2. **Voting**

   a. Total count
   b. In favor, against, abstentions count
   c. Country voting

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        Northern Ireland" outcome="draftResolution"/>
    <step date="2018-12-20" as="A/73/L.72/Add.1" by="Albania, Andorra, Argentina, Australia, Belgium, Cameroon, C
        Montenegro, New Zealand, Norway, Republic of Korea, Samoa, San Marino, Switzerland, the former Yugoslav R
        outcome="draftResolutionAdditionalSponsors"/>
    <step date="2018-12-20" as="A/73/PV.63" by="generalAssembly" outcome="adopted"/>
</workflow>
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                    <organization refersTo="memberState"> ALGERIA</organiz
                    <organization refersTo="memberState"> ANDORRA</organi
                    <organization refersTo="memberState"> ARGENTINA</org
```

Compiling the resolution
Robotic writing and extraction of resolution content

"Robotic writing" auto-generates the initial paragraph with programmed language and metadata from the XML file

Specific resolution content extracted from XML file inserted into compilation

RESOLUTION 73/258

Adopted at the 63rd plenary meeting, on 20 December 2018, by a recorded vote of 142 to none, with 12 abstentions,* on the basis of draft resolution A/73/L.72 and A/73/L.72/Add.1, sponsored by: Albania, Andorra, Argentina, Australia, Austria, Belgium, Bulgaria, Cameroon, Canada, Chile, Croatia, Cyprus, Czechia, Denmark, Equatorial Guinea, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Montenegro, Netherlands, New Zealand, Norway, Poland, Portugal, Republic of Korea, Romania, Samoa, San Marino, Slovakia, Slovenia, Spain, Sweden, Switzerland, the former Yugoslav Republic of Macedonia, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America

* *In favour:* Albania, Algeria, Andorra, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahamas, Bahrain, Bangladesh, Belgium, Belize, Bhutan, Bolivia (Plurinational State of), Brazil, Brunei Darussalam, Bulgaria, Burundi, Cameroon, Canada, Central African Republic, Chad, Chile, Colombia, Comoros, Costa Rica, Côte d'Ivoire, Croatia, Cyprus, Czechia, Denmark, Djibouti, Dominican Republic, Ecuador, Egypt, Estonia, Eswatini, Ethiopia, Finland, France, Gambia, Georgia, Germany, Ghana, Greece, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hungary, Iceland, India, Indonesia, Iraq, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Lao People's Democratic Republic, Latvia, Lebanon, Lesotho, Libya, Liechtenstein, Lithuania, Luxembourg, Malawi, Malaysia, Maldives, Malta, Mauritius, Mexico, Micronesia (Federated States of), Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nepal, Netherlands, New Zealand, Nigeria, Norway, Oman, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Republic of Korea, Republic of Moldova, Romania, Saint Lucia, Saint Vincent and the Grenadines, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Singapore, Slovakia, Slovenia, Solomon Islands, South Africa, Spain, Sri Lanka, Sudan, Suriname, Sweden, Switzerland, Tajikistan, Thailand, the former Yugoslav Republic of Macedonia, Togo, Trinidad and Tobago, Tunisia, Turkey, Tuvalu, Ukraine, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, United States of America, Uruguay, Vanuatu, Venezuela (Bolivarian Republic of), Viet Nam, Yemen, Zambia

Against: None

Abstaining: Belarus, Cambodia, China, Cuba, Democratic People's Republic of Korea, Iran (Islamic Republic of), Mali, Myanmar, Nicaragua, Russian Federation, Syrian Arab Republic, Zimbabwe

73/258. Cooperation between the United Nations and the Organisation for the Prohibition of Chemical Weapons

The General Assembly,

Recalling its resolution 71/250 of 22 December 2016 on cooperation between the United Nations and the Organisation for the Prohibition of Chemical Weapons,

The way forward
for the eLUNa Converter

Potential for the future

Possible applications of the eLUNa Converter in 2020

- Automatically convert into XML **other categories** of UN parliamentary documentation

- Identify **other opportunities** for **robot writing**

- Explore use of eLUNa Converter in other **UN organizations**

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Additional slides

Linking documents to SDGs
Automatically associate each document to an SDG

○ Identification of relevant SDGs in each document and SDG naming convention (URI) to create an ecosystem of linked documents

MOST RELEVANT SDGs

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

NAME: Target 16.1

DESCRIPTION: Significantly reduce all forms of violence and related death rates everywhere

URI: http://metadata.un.org/sdg/16.1

KEYWORDS:

JUSTICE   UNBIS   ∨

CIVIL SOCIETY   EuroVoc   UNBIS

PEACEFUL COEXISTENCE   UNBIS

SOCIAL JUSTICE   UNBIS

SUSTAINABLE DEVELOPMENT   EuroVoc   UNBIS

RIGHT TO JUSTICE   EuroVoc

Deep analysis and visualization
Providing the raw material for future and existing applications