

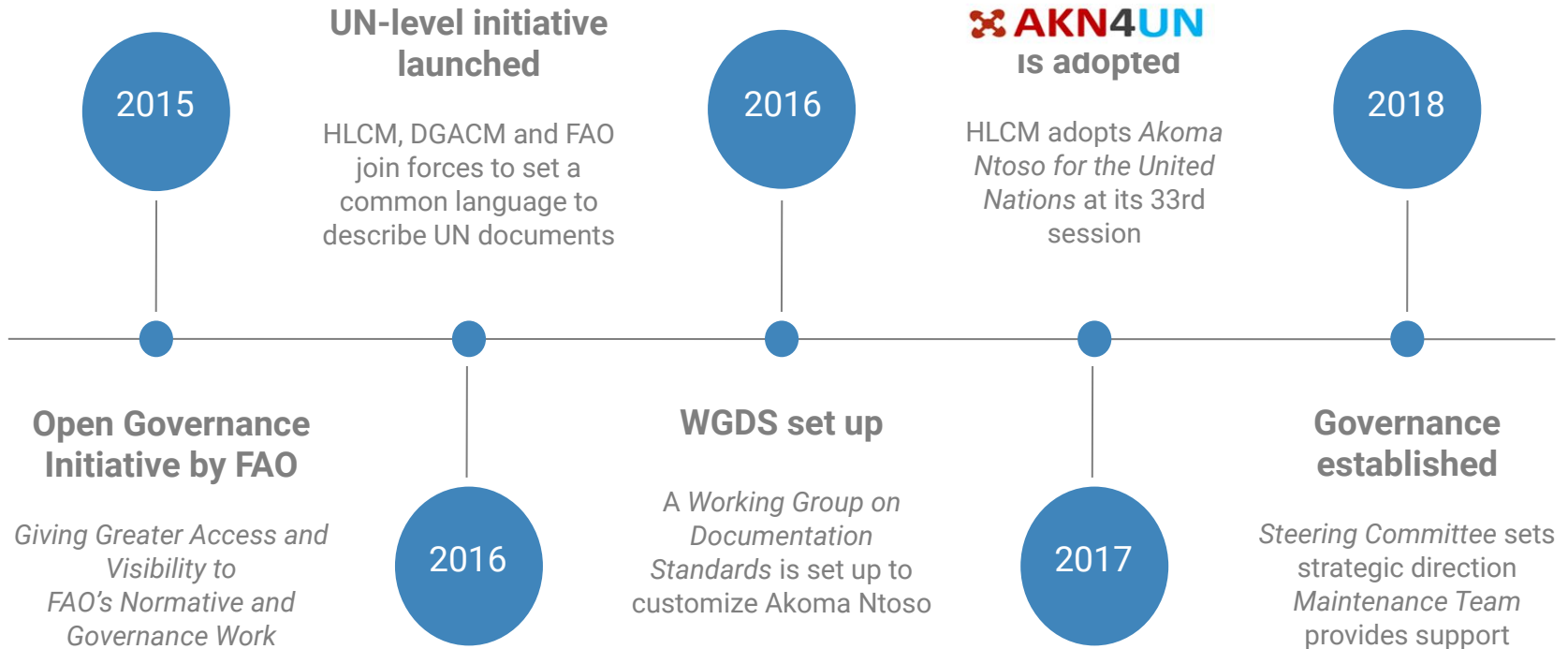
Machine readability and robot writing

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



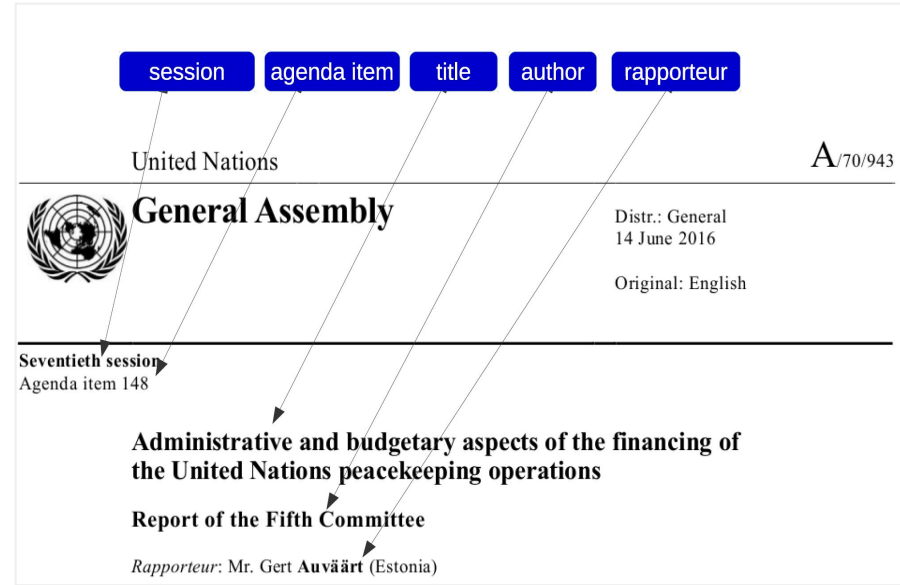
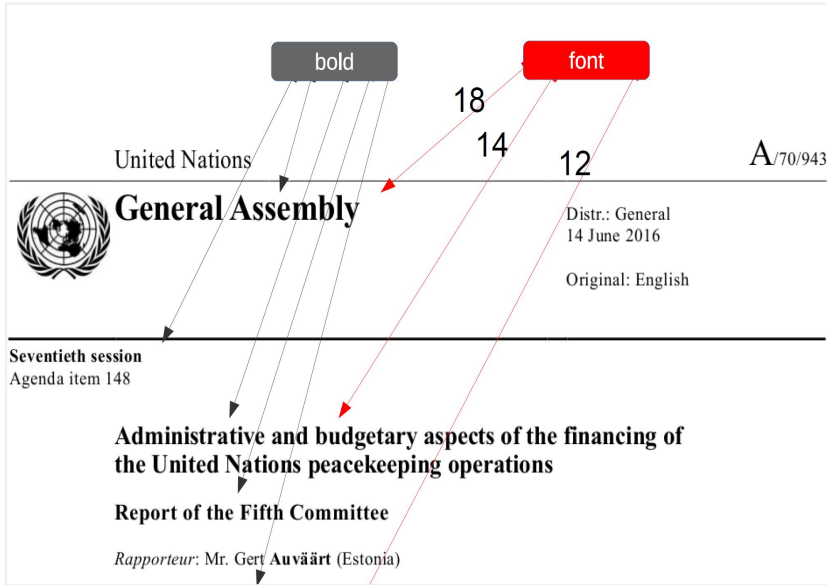
United Nations

Overview



What are we telling computers?


Limited intelligible instructions



Finding meaning in our documents

Unleashing the potential of technology

United Nations

 **General Assembly**

Distr.: General
17 October 2016

A/RES/71/4

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

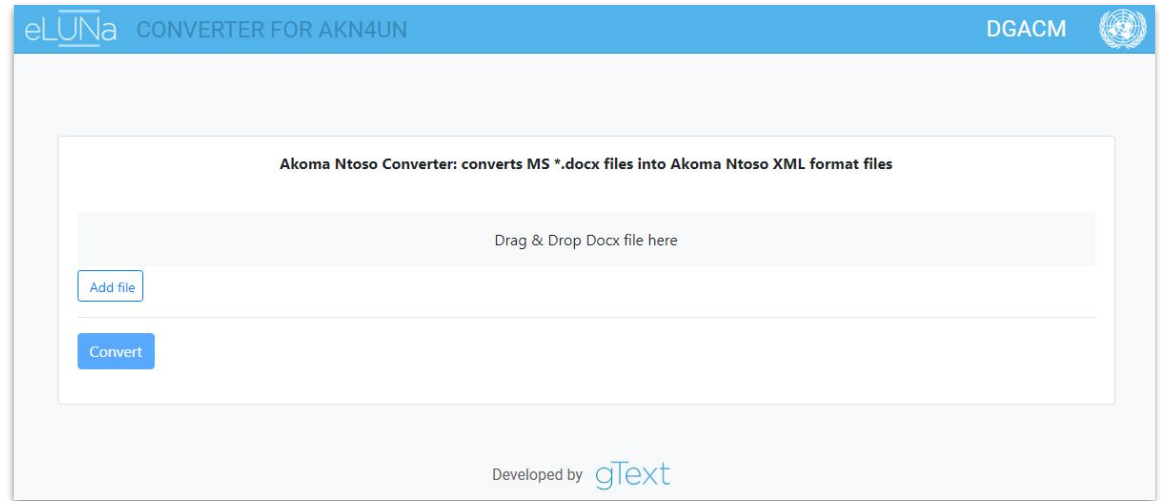
eLUNa Converter

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

United Nations **General Assembly** A/RES/73/8

Distr.: General
5 November 2018

Seventy-third session
Agenda item 43

Resolution adopted by the General Assembly on 1 November 2018

[without reference to a Main Committee (A/73/L.3)]

73/8. Necessity of ending the economic, commercial and financial embargo imposed by the United States of America against Cuba

The General Assembly,

Determined to encourage strict compliance with the purposes and principles enshrined in the Charter of the United Nations,

Reaffirming, among other principles, the sovereign equality of States, non-intervention and non-interference in their internal affairs and freedom of international trade and navigation, which are also enshrined in many international legal instruments,

Recalling the statements of the Heads of State or Government of Latin America and the Caribbean at the Summits of the Community of Latin American and Caribbean States regarding the need to put an end to the economic, commercial and financial embargo imposed against Cuba,

Concerned about the continued promulgation and application by Member States of laws and regulations, such as that promulgated on 12 March 1996 known as "the Helms-Burton Act", the extraterritorial effects of which affect the sovereignty of other States, the legitimate interests of entities or persons under their jurisdiction and the freedom of trade and navigation,

Taking note of declarations and resolutions of different intergovernmental forums, bodies and Governments that express the rejection by the international community and public opinion of the promulgation and application of measures of the kind referred to above,

Recalling its resolutions 47/19 of 24 November 1992, 48/16 of 3 November 1993, 49/9 of 26 October 1994, 50/10 of 2 November 1995, 51/17 of 12 November 1996, 52/10 of 5 November 1997, 53/4 of 14 October 1998, 54/21 of 9 November 1999, 55/20 of 9 November 2000, 56/9 of 27 November 2001, 57/11 of 12 November

RESOLUTION 73/8

Adopted at the 30th plenary meeting, on 1 November 2018, by a recorded vote of 189 to 2, with no abstentions,* on the basis of draft resolution A/73/L.3, sponsored by Cuba

* *In favour:* Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belize, Benin, Bhutan, Bolivia (Plurinational State of), Bosnia and Herzegovina, Botswana, Brazil, Brunei Darussalam, Bulgaria, Burkina Faso, Burundi, Cabo Verde, Cambodia, Cameroon, Canada, Central African Republic, Chad, Chile, China, Colombia, Comoros, Congo, Costa Rica, Côte d'Ivoire, Croatia, Cuba, Cyprus, Czechia, Democratic People's Republic of Korea, Democratic Republic of the Congo, Denmark, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Eswatini, Ethiopia, Fiji, Finland, France, Gabon, Gambia, Georgia, Germany, Ghana, Greece, Grenada, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hungary, Iceland, India, Indonesia, Iran (Islamic Republic of), Iraq, Ireland, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kiribati, Kuwait, Kyrgyzstan, Lao People's Democratic Republic, Latvia, Lebanon, Lesotho, Liberia, Libya, Liechtenstein, Lithuania, Luxembourg, Madagascar, Malawi, Malaysia, Maldives, Mali, Malta, Marshall Islands, Mauritania, Mauritius, Mexico, Micronesia (Federated States of), Monaco, Mongolia, Montenegro, Morocco, Mozambique, Myanmar, Namibia, Nauru, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Republic of Korea, Romania, Russian Federation, Rwanda, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, Solomon Islands, Somalia, South Africa, South Sudan, Spain, Sri Lanka, Sudan, Suriname, Sweden, Switzerland, Syrian Arab Republic, Tajikistan, Thailand, the former Yugoslav Republic of Macedonia, Timor-Leste, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, United Republic of Tanzania, Uruguay, Uzbekistan, Vanuatu, Venezuela (Bolivarian Republic of), Viet Nam, Yemen, Zambia, Zimbabwe

Against: Israel, United States of America

Abstaining: None

73/8. Necessity of ending the economic, commercial and financial embargo imposed by the United States of America against Cuba

The General Assembly,

Determined to encourage strict compliance with the purposes and principles enshrined in the Charter of the United Nations,

Reaffirming, among other principles, the sovereign equality of States, non-intervention and non-interference in their internal affairs and freedom of international trade and navigation, which are also enshrined in many international legal instruments,

Recalling the statements of the Heads of State or Government of Latin America and the Caribbean at the Summits of the Community of Latin American and Caribbean States regarding the need to put an end to the economic, commercial and financial embargo imposed against Cuba,

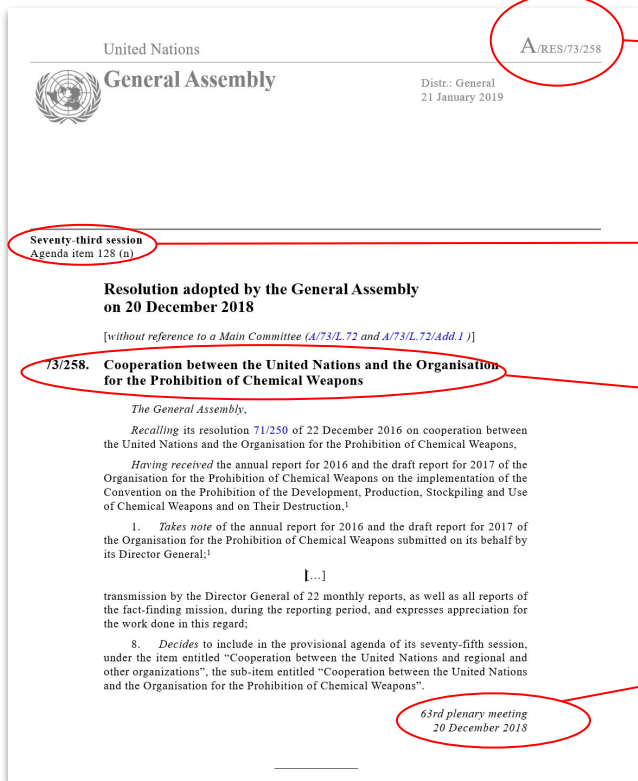
External metadata

- a. Sponsorship
- b. Voting

Details	
Title	Necessity of ending the economic, commercial and financial embargo imposed by the United States of America against Cuba. CUBA--UNITED STATES
Agenda	A/73/251 43 Necessity of ending the economic, commercial and financial embargo imposed by the United States of America against Cuba. CUBA--UNITED STATES
Resolution	A/RES/73/8
Meeting record	A/73/PV.30
Draft resolution	A/73/L.3
Note	RECORDED - No machine generated vote
Vote summary	Voting Summary Yes: 189 No: 2 Abstentions: Non-Voted: 0
Vote date	2018-11-01
Vote	Y AFGHANISTAN Y ALBANIA Y ALGERIA Y ANDORRA Y ANGOLA

Creating a resolution in XML

Structural markup and identification of semantic elements in A/RES



```
</p>  
- <p class="upperRight">  
  <docNumber refersTo="#symbol">A/RES/73/258</docNumber>  
,
```


```
</p>  
<session value="73" refersTo="#generalAssembly" eId="cover  
</p>  
- <p>  
  <inline name="agenda item">Agenda item 128 (n)</inline>
```

```
- <document>  
  <docNumber>73/258.</docNumber>  
  <docTitle refersTo="#resolutionTitle">Cooperation between the United Nations  
</document>
```

```
</members>  
- <conclusions class="SingleTxt" eId="conclusions">  
  - <p>  
    <inline title="63rd" name="adoptionMeeting">63rd plenary meeting</inline>  
    <eol/>  
    <docDate date="2018-12-20" refersTo="#adoptionDate">20 December 2018</docDate>  
  </p>  
</conclusions>
```

Displaying and adjusting metadata

Editable *Show metadata* menu

eLUNa CONVERTER FOR AKN4UN DGACM 

Akoma Ntoso Converter: converts MS *.docx files into Akoma Ntoso XML format files

File name	File size			
1. N1846410.docx	58 kb	<input checked="" type="checkbox"/> Show metadata	<input type="checkbox"/> Add compilation	DELETE
Document information				
Organ	United Nations			
Session	Seventy-third session			
Agenda item:	Agenda item 128 (n)			
Title	Cooperation between the United Nations and the Organisation for the Prohibition of Chemical Weapons			
Number	73/258			
Symbol	A/RES/73/258			
Originating body	<input type="text"/>			
Draft resolution	<input type="text" value="A/73/L.72"/>			
Draft sponsor	<input type="text" value="Austria, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Equatorial Guinea, Estonia, Finland, France, Greece, Ireland, Ital"/>			
Additional sponsors	<input type="text" value="Albania, Andorra, Argentina, Australia, Belgium, Cameroon, Canada, Chile, Georgia, Germany, Hungary, Iceland, Jap"/>			

Adding metadata from other systems

Several data sources

Session:	73rd session of General Assembly
Committee:	Plenary
Meeting date:	Thu 20 Dec 2018
Vote time:	11:44:22 AM
Meeting:	62nd plenary meeting
Agenda item:	20
Agenda:	Sustainable development
Document:	A/73/538
Additional document info:	Draft resolution I

<i>In favour:</i>	166	Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Austria, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bhutan, Bolivia (Plurinational State of), Bosnia and Herzegovina, Botswana, Brazil, Brunei Darussalam, Bulgaria, Burkina Faso, Burundi, Cabo Verde, Cambodia, Central African Republic, Chad, Chile, China, Colombia, Congo, Costa Rica, Croatia, Cuba, Cyprus, Czech Republic, Democratic People's Republic of Korea, Denmark, Djibouti, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, Gabon, Gambia, Georgia, Germany, Ghana, Greece, Guinea, Guinea-Bissau, Guyana, Hungary, Iceland, India, Indonesia, Iran (Islamic Republic of), Iraq, Ireland, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Kyrgyzstan, Lao People's Democratic Republic, Latvia, Lebanon, Lesotho, Libya, Liechtenstein, Lithuania, Luxembourg, Madagascar, Malawi, Malaysia, Maldives, Mali, Malta, Mauritania, Mauritius, Mexico, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Republic of Korea, Republic of Moldova, Romania, Russian Federation, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, Solomon Islands, South Africa, Spain, Sri Lanka, Sudan, Suriname, Sweden, Switzerland, Syrian Arab Republic, Tajikistan, Thailand, the former Yugoslav Republic of Macedonia, Timor-Leste, Togo, Trinidad and Tobago, Tunisia, Turkey, Tuvalu, Uganda, Ukraine, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, United Republic of Tanzania, Uruguay, Uzbekistan, Venezuela (Bolivarian Republic of), Viet Nam, Yemen, Zambia, Zimbabwe
<i>Against:</i>	7	Australia, Canada, Israel, Marshall Islands, Micronesia (Federated States of), Nauru, United States of America
<i>Abstaining:</i>	7	Cameroun, Côte d'Ivoire, Guatemala, Honduras, Papua New Guinea, Tonga, Vanuatu

e-Votes module

The screenshot shows the e-deleGATE interface. At the top, there's a navigation bar with 'What's New', 'General Assembly', 'Security Council', 'ECOSOC', 'Conference', 'Protocol', and 'Resources'. The main content area is titled 'Second Committee e-Sponsorship - past sessions'. A blue 'Back' button is visible. A red warning box states: 'This draft resolution is closed for co-sponsorship.' Below this, the main sponsor is listed as 'KAZAKHSTAN' with a submission date of '18 Oct 2017 23:36:54'. The draft resolution details include:

- Agenda item: 19
- Agenda title: Sustainable development
- Draft resolution title: International cooperation and coordination for the human and ecological rehabilitation and economic development of the Semipalatinsk region of Kazakhstan
- Informal document: A.C.2.72/L.28-Semipalatinsk-DRAFT.docx
- Draft resolution: A/C.2/72/L.28 (CLOSED), A/C.2/72/L.28/Rev.1 (CLOSED)

 Contact details for Ruslan Bultrikov (bultrikov@gmail.com, 6466102810) are provided. A list of co-sponsors is shown at the bottom, including Afghanistan, Armenia, Belarus, Canada, Costa Rica, and Dominican Republic, with their respective submission dates.

e-Delegate portal

Details	
Title	Report of the Human Rights Council : resolution / adopted by the G
Agenda	A/68/251 64 Report of the Human Rights Council. UN. HUMAN RIGH
Resolution	A/RES/68/144
Meeting record	A/68/PV.70
Draft resolution	A/C.3/68/L.75
Committee report	A/68/451
Note	RECORDED
Vote summary	Voting Summary Yes: 94 No: 71 Abstentions: 23 Non-Voting: 5 Total voting mem
Vote date	2013-12-18
Vote	Y AFGHANISTAN N ALBANIA Y ALGERIA N ANDORRA

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

```
- <workflow source="#un">  
  <step date="2018-12-14" as="A/73/L.72" by="Austria, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Equatorial Guinea, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Northern Ireland" outcome="draftResolution"/>  
  <step date="2018-12-20" as="A/73/L.72/Add.1" by="Albania, Andorra, Argentina, Australia, Belgium, Cameroon, Canada, Montenegro, New Zealand, Norway, Republic of Korea, Samoa, San Marino, Switzerland, the former Yugoslav Republic of Macedonia" outcome="draftResolutionAdditionalSponsors"/>  
  <step date="2018-12-20" as="A/73/PV.63" by="generalAssembly" outcome="adopted"/>  
</workflow>
```

2. Voting

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

```
- <analysis source="#un">  
  - <parliamentary>  
    - <voting outcome="adoptedRecordedVote">  
      - <count value="142" refersTo="inFavour">  
        - <akn4un:voters>  
          <organization refersTo="memberState">ALBANIA</organization>  
          <organization refersTo="memberState">ALGERIA</organization>  
          <organization refersTo="memberState">ANDORRA</organization>  
          <organization refersTo="memberState">ARGENTINA</organization>
```

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**



For more information:

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Natalia Bondonno, bondonno@un.org

gText Project Manager

Jerah Kirby, kirbyj@un.org

gText Deputy Project Manager

The logo for gText, featuring the lowercase letter 'g' followed by the uppercase letter 'T' and the lowercase letters 'e', 'x', and 't'. The 'g' and 'T' are in a blue color, while the 'e', 'x', and 't' are in a lighter blue color. The font is a clean, sans-serif typeface.

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



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

