

Digital transformation at Italian Chamber of Deputies

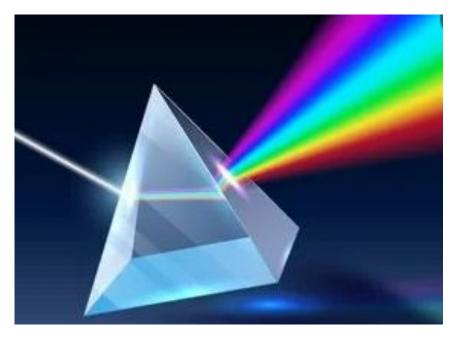
Summer School LEX2024

Law as Platform: LegalXML Standards, Legal Analystics, AI, LLM

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Data, people, technologies



digital transformation in Parliament



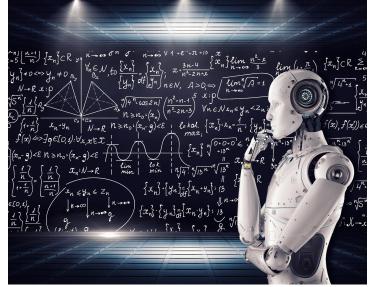
Technologies... what's new?

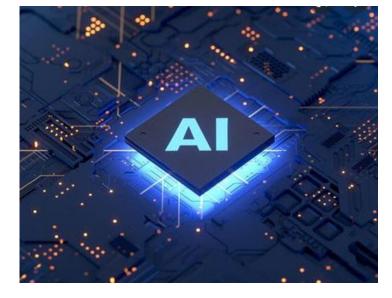
















Agenda

- Digital Transformation
- Al and genAl
 - experiments, projects
 - rules of conduct
 - challenge



Digital transformation

The Chamber of Deputies has long been engaged with activities aiming the dematerialization of the legislative processes

Goals:

- simplification and speeding up the work of deputies, collaborators and support staff
- standardization and safety of procedures
- usability of informations and transparency of processes



geoCamera



geoCamera is a web application used by deputies, parliamentary groups and their collaborators.

Functionalities:

- consultation of documents in digital format during Plenary sessions and Committees sessions
- submission of parliamentary acts (in digital format) to Offices



geoCamera



geoCamera application is available on:

- the Intranet Portal of the Chamber of deputies as web application
- mobile devices as mobile app (tablet and smartphone)
 - FaceID/touchID authentication





geoCamera modules

- geoEme: presentation of amending proposals, incidental issues and agendas (module released in July 2024)
- geoSind: presentation of control acts on government
- geoPdl: presentation of bills, amendment of Chamber's internal Regulation (Doc. II) and parliamentary Committees of inquiry (Doc. XXII)





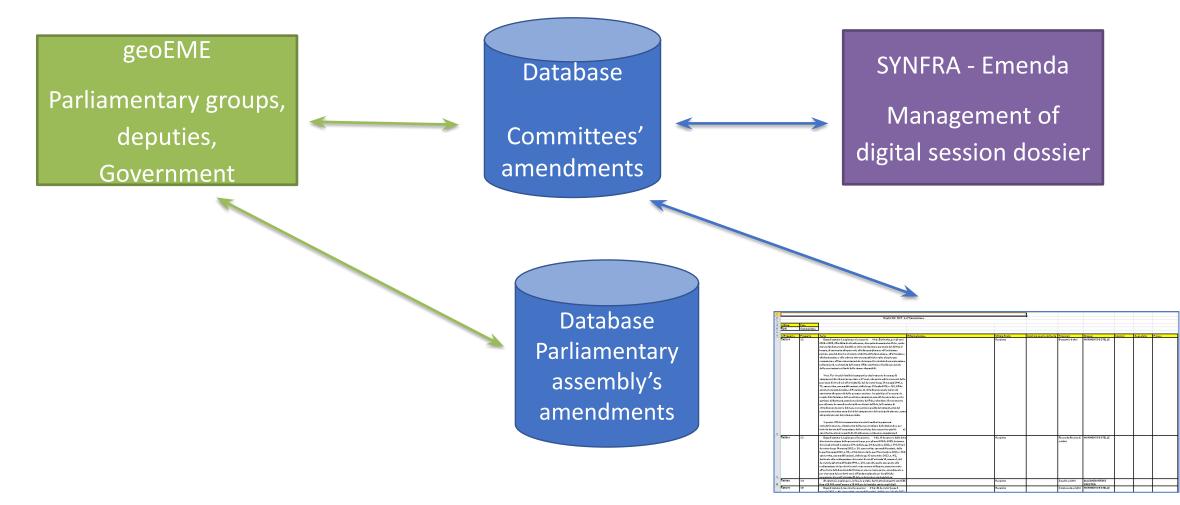
geoCamera modules

- geoAula/geoComm: consultation of the daily agenda and documents of the Parliamentary Assembly and Committees
- **geoMissioni:** presentation of mission requests for institutional assignments (*module released in July 2024*)





Architecture

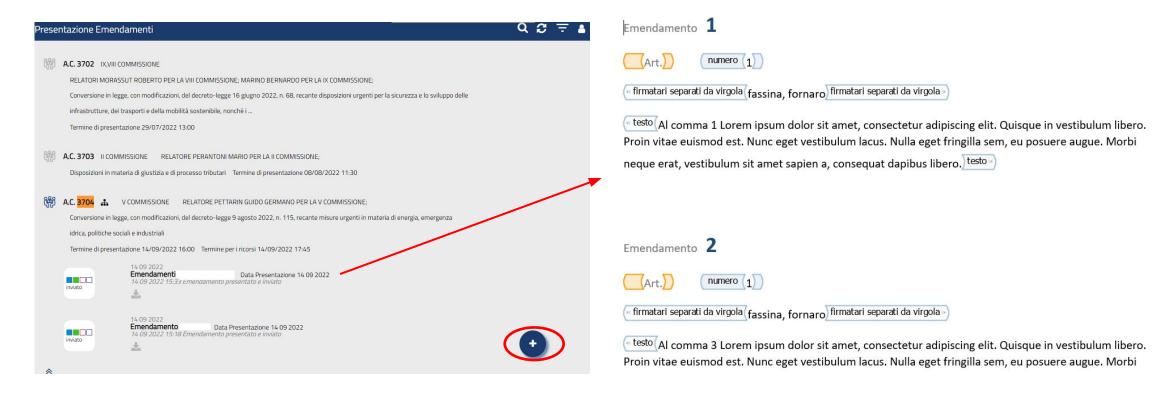


Amendments grid for government



Presentation of amendments

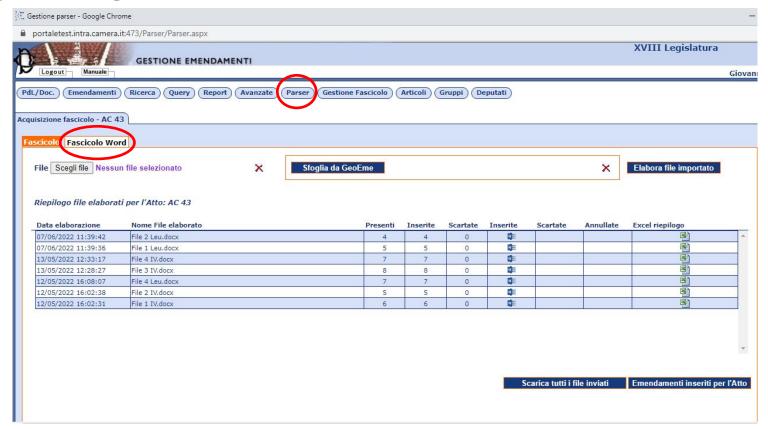
 All amendments are digitally submitted by deputies through geoEme module





Registration of amendments

- The amendments arrive in *real-time* on the relevant Committee's dashboard until amendments submission deadline expiration
- Then, they are registered and numbered





Ordering of amendments

After amendments submission deadline expiration, the first dossier is processed by an **artificial intelligence algorithm** for *textual drafting* and *ordering purposes*





Drafting of amendments

The staff supporting the relevant Committee work in a *collaborative* way, using the software application, for **textual drafting** and for preparing documentation for **admissibility check**





Digital budget session

Mercoledì 4 novembre 2020

- 3 -

Giunta per il regolamento

GIUNTA PER IL REGOLAMENTO

SOMMARIO

Sui lavori della Giunta.

Roberto FICO, *Presidente*, sottopone alla Giunta, con riserva di discuterne in una

prossima seduta, la questione - peraltro già da lui segnalata alla Giunta fra i temi di possibile riforma regolamentare e, poi, alla Conferenza dei Presidenti di Gruppo e che ritiene di proporre in vista dell'imminente avvio della sessione di bilancio - della presentazione in formato digitale degli atti di iniziativa dei deputati, e degli emendamenti in particolare, oltre che per evitare l'eccessiva circolazione di documenti cartacei, anche per favorirne una più rapida e agile lavorazione e pubblicazione da parte degli uffici. È a conoscenza del fatto che la questione è oggetto di discussione in sede di ufficio di presidenza della Commissione bilancio: ritiene che sarebbe comunque opportuno che la Giunta definisca un indirizzo in proposito, se non prescrittivo quanto meno formulato in termini di forte raccomandazione, almeno con riferimento appunto alla imminente sessione di bilancio.



Numbers of digitalization

- Since 2020 the annual budget session has been conducted as a digital session
- The members of the Chamber of deputies submitted more than 1000 amendments during annual budget session of 2023
- The Committee Service, the Studies Service and State Budget Service worked in a **collaborative and hybrid way** on the dossier thanks to digitalization (dec 2023)





Amendments management

During the consideration stage by the Committee, Members could read in **real-time** the current text under examination on the overhead screens and from their personal devices





Emenda





During the consideration stage by the Committee, Members could read in real-time the current text under examination on the overhead screens and from their personal devices



Committees' overhead screens

A.C. 3514 17:57 Seduta del 11/05/2022

Delega al Governo in materia di contratti pubblici » - Relatrici: Chiara BRAGA, Erica MAZZETTI - VIII COMMISSIONE (AMBIENTE, TER

Al comma 2, dopo la lettera a) inserire la seguente: a-bis) revisione delle competenze dell'Autorità nazionale anticorruzione in materia di contratti pubblici, al fine di rafforzarne le funzioni di vigilanza sul settore e di supporto alle stazioni appaltanti.

1.3 Relatrici PELLICANI, BURATTI, CIAGA', MORASSUT, F/RIF **APPROVATO** MORGONI, PEZZOPANE, ROTTA Governo F/RIF (Riform. 1) Ritirati Assorbiti Decaduti Preclusi Irricevibili Parz Inam Riammessi Segnalati Accantonati Approvati Respinti 186

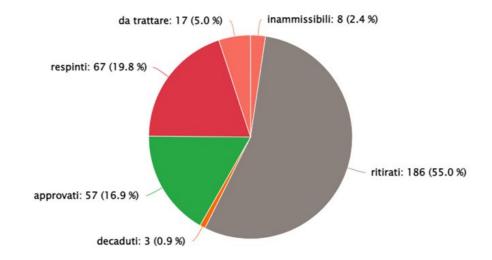


Monitoring of Committees' sittings

La seduta è SOSPESA

0
338
8
57
67
С
186
0
0
3
17

A.C. 3514 - Dettaglio statistico degli emendamenti



VOTAZIONI Effettuate 56

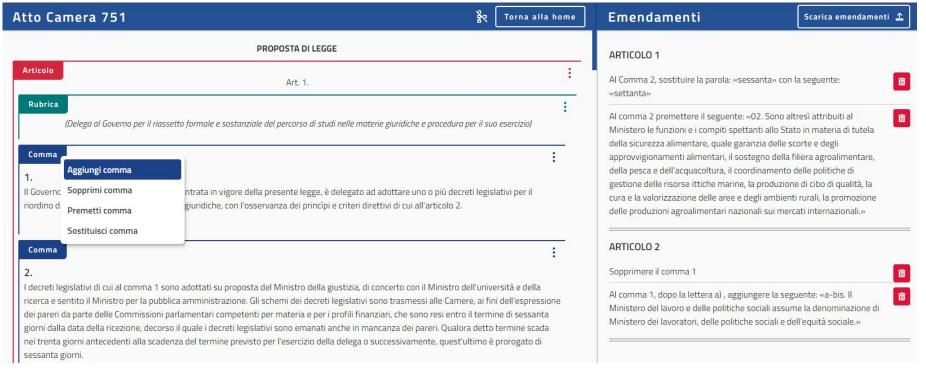
Restanti 0

Highcharts.com



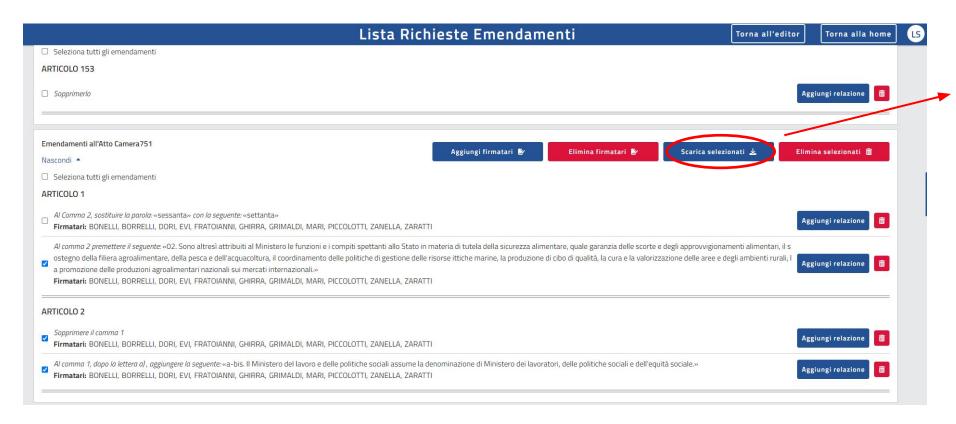
Camera dei Deputati Automated writing of amendments

- A prototype for the automatic writing of amendments is being created to support the amendment writing phase
 The users will be deputies and parliamentary groups
- This application allows the user to directly modify the text of the bill and obtain the corresponding modification proposals structured in the form of an **amendment** according to the rules of *parliamentary syntax* of Italian Chamber of deputies





Camera dei Deputati Automated writing of amendments download



Emendamento

Articolo 2

BONELLI, BORRELLI, DORI, EVI, FRATOIANNI, GHIRRA, GRIMALDI, MARI, PICCOLOTTI, ZANELLA, ZARATTI

Sopprimere il comma 1



- consolidated solutions
- past experiments
- recent experiments



Automatic Speech Recognition (ASR)



- Automatic production of verbatim reports of Assembly sessions: transcription of speech plus human supervision ("human in the loop")
- Automatic production of assembly sessions subtitles and their insertion in the video available through web TV and institutional website



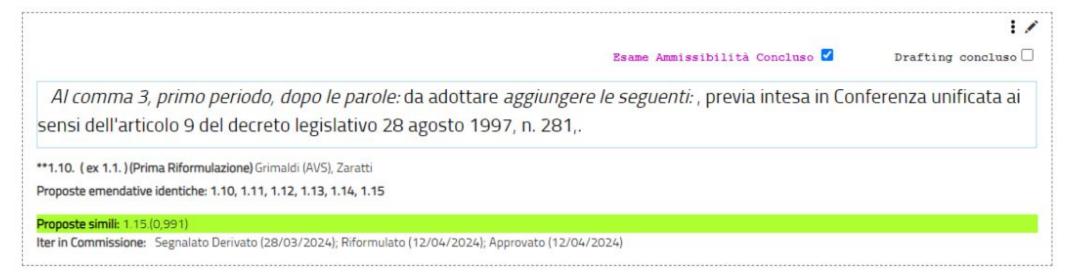
Amendments sorting and similarities

The file of amendments, referred to a particular bill, is processed by an Al for:

- sorting the amendments according to voting order
- · computing the similarity scores among amendments

This solution is based on text mining, NLP and semantic distance computation

IPU's Innovation Tracker of Apr 2023 on digital innovation that supports parliamentary procedures





Tools used for cybersecurity

The Security Operation Center (SOC), which is part of the Logical Security Office, is equipped with tools and technologies that use AI techniques for activities such as:

- anomaly detection
- user behavioral analysis
- correlation of security events
- passive analysis of network traffic
- detection of differences from the usual behavior of users and analysis of the dangerous behaviors
- vulnerability verification of software systems: Al simulates the behavior of a potential attacker to test defense systems

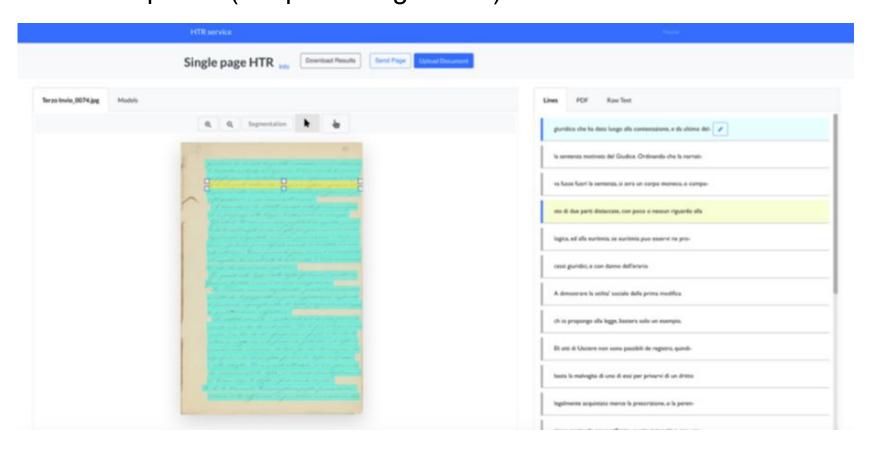


Past experiments



Automatic transcription of manuscripts from Historical Archive

Segmentation and transcription of manuscripts (OCR) from the Historical Archive of the Chamber of deputies (deep learning model)



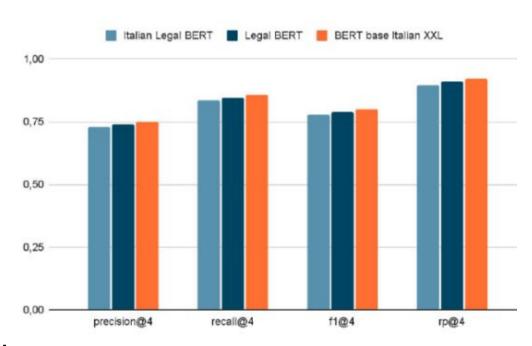


Automatic EuroVoc classification of legislative documents

In collaboration with CINI (National Inter University Consortium for Informatics). The training data consists of Italian legislative documents published in the Official Gazette from 2013 to 2023. Experiments performed with different models:

- legal BERT
- BERT base Italian XXL
- Italian legal BERT

Result: classifier with items up to the first level of EuroVoc descriptors (546 classes); good compromise between expressiveness of classes and availability of data



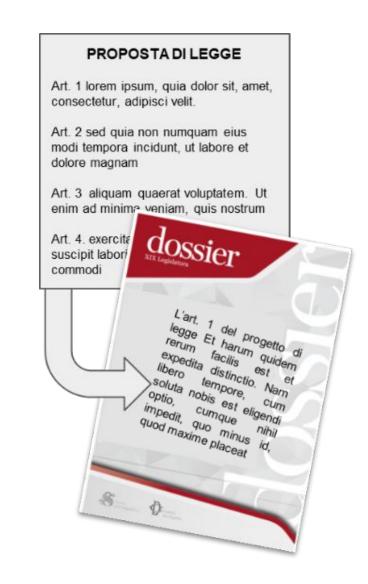


Production of summary notes from bills

Creation of notes for dossiers related to bills submitted to the Chamber, using Large Language Models (LLama2)

Considerations:

- The dossier is not a summary, rather they are reworkings with:
- explication of implicit aspects (e.g., legislative references)
- inclusion of external knowledge/specific considerations
- inclusion of tables/images
- texts often beyond the length of the standard LLM context (1-4K, dynamic world)





Latest experiments

- "Labs oriented" approach (IT together with Research department)
- Inter-institutional collaborations
- Italian Parliamentary IT hub for a couple of POCs
- State Mint and Polygraphic Institute for 1 POC



Transcription / translation podium

Interactive podium with subtitling and automatic translation in real time





Querying Government's DB on implementing acts

Natural language querying of Government's database related to monitoring and parliamentary control on implementing acts

Riassumi i 3 provvedimenti principali (in base al finanziamento ricevuto) del governo DRAGHI

ASK

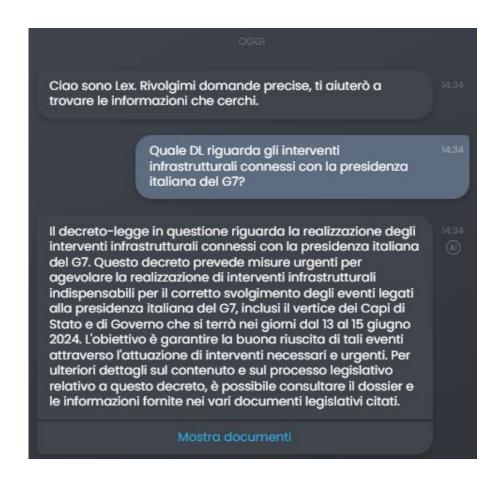
I tre provvedimenti principali del governo Draghi, in base al finanziamento ricevuto, sono:

- Termini e modalità di riparto delle risorse del Fondo per l'housing universitario" per acquisire nuovi posti letto presso alloggi o residenze per studenti delle istituzioni della formazione superiore": questo provvedimento ha ricevuto un finanziamento di 660 milioni di euro.
- Termini e modalità di erogazione delle risorse da destinare al sostegno degli operatori economici nel settore del turismo, dello spettacolo e dell'automobile gravemente colpiti dall'emergenza epidemiologica da Covid-19: questo provvedimento ha ricevuto un finanziamento di 150 milioni di euro.
- Indicazione dell'importo, entro il limite massimo di 150 milioni di euro, da destinare a progetti di decarbonizzazione del ciclo produttivo dell'acciaio presso lo stabilimento siderurgico di Taranto: questo provvedimento ha ricevuto un finanziamento di 150 milioni di euro.



Chatbot for the documentation website

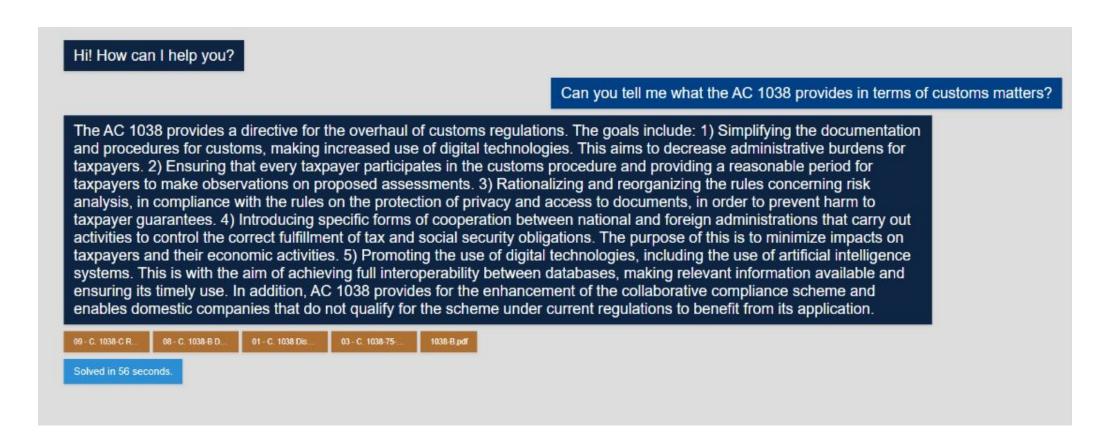
Chatbot to support consultation and search on the parliamentary documentation website for a quicker understanding of parliamentary work and legislative documents





GenAl to help understanding the process of a bill

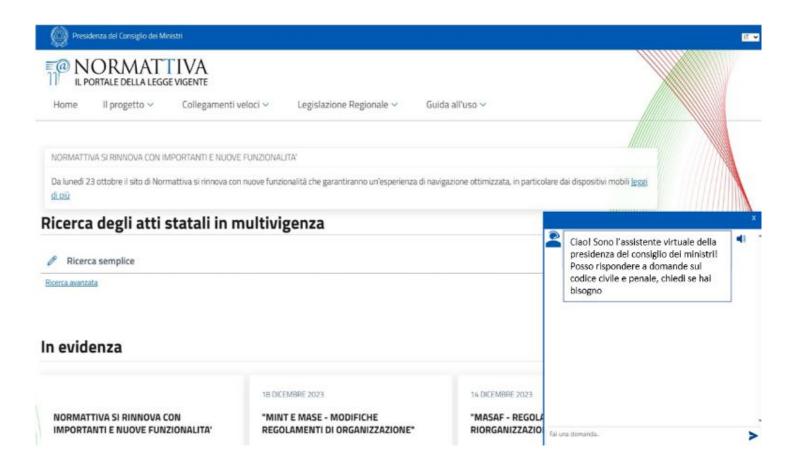
- Generative AI to help understanding the process of a bill in both Houses of Parliament, its discussion in Committee and in Assembly
- using bill text, amendments, hearings, votes, verbatim reports, dossier





Generative AI for simplifying the comprehension of the Italian legislation

- Query a set of laws in the Normattiva database in natural language.
- The system answer includes a summary of the relevant laws and the link to the full text of the law (collaboration with State Mint and Polygraphic Institute)







Tags and summaries of parliamentary reports

Generative AI to facilitate the understandability of Plenary reports

- Automatically division of the report into different sections based on the subject
- Generate a brief summary for each section subject

Titolo	Tag della sezione	Riassunto	Testo Originale
Comunicazione del risultato della votazione per l'elezione di due Segretari di Presidenza, ai sensi dell'articolo 5, commi 5 e 6, del Regolamento	 Presidenza Votazione Deputati 	Durante la seduta della Camera dei Deputati del 8 novembre 2022, è stato votato per l'elezione di due Segretari di Presidenza in ottemperanza all'articolo 5 del Regolamento. Alla votazione hanno partecipato 348 deputati, con Alessandro Colucci e Benedetto Della Vedova che hanno ricevuto rispettivamente 185 e 119 voti. Sono stati registrati anche 1 voto disperso, 31 schede bianche e 12 schede nulle, con i due deputati proclamati eletti come Segretari di Presidenza.	Comunicazione del risultato della votazione per l'elezione di due Segretari di Presidenza, ai sensi Lupi Maurizio Molteni Nicola Pichetto Fratin Gilberto Polidori Catia Prisco Emanuele Tajani Antonio



Collaboration with ASIMOV AI

(from August 2024)

Asimov uses the most advanced artificial intelligence tools to understand the legal effect of proposed amendments, relying exclusively on official legal sources:

- General testing and validation of the platform
- Access through Intranet Portal of Chamber (SSO)
- ASIMOV APIs integration and connection to Chamber's legislative web applications



Rules of conduct for the usage of tools based on Generative Artificial Intelligence at Italian Chamber of Deputies

- They were published in April 2024
- Pillars
 - Fundamental human rights, ethics, privacy protection
- Confidentiality and integrity of data (data management)
- Sensitive data and data covered by professional secrecy shall not be used (risk assessment)
- IT services using GenAl shall be **listed explicitly** within IT Service Catalogue and technical ownership owned by IT department



Rules of conduct for the usage of tools based on Generative Artificial Intelligence at Italian Chamber of Deputies

- "Human in the loop" approach (support and not replace humans)
- Accountability and responsibility
- users shall be informed on genAl usage through disclaimers
- Colleagues' education and training on Al
- "Security by design" approach for solution development process



Generative Artificial Intelligence projects awarded in the Chamber of Deputies (25th July 2024)

- 1. **Legislab** is addressed to the offices of the Chamber of Deputies, it is a platform for the analysis of Italian legislation and for supporting the monitoring of laws.
- 2. **GenAl4Lex** project is addressed to MPs and is presented by Professor Monica Palmirani. It aims to support the drafting of legislative texts, the analysis of amendments and legal references, and the compliance of the text with the pre-existing legal framework.
- 3. **DepuChat** is addressed to citizen. It is a chatbot that, through generative intelligence, allows users to search data and information stored on the Chamber's websites to provide answers to questions related to the MPs' activities in Parliament.



Thanks for your attention!

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