



European Parliament

Accessibility for the deaf and hard of hearing through language technology

Real-time speech-to-text and machine translation tool
of the European Parliament

Valter Mavrič – Director-General for Translation
European Parliament

Translation Service = DG TRAD

- 24 languages
- 552 language combinations
- 1300 language professionals and support staff
- Luxembourg, Brussels and Strasbourg
- Text, audio, video
- 2021: more than 2 million pages translated and thousands of audio podcasts and subtitled videos created
- 75 % of documents are legislative
- 35 % of translations are outsourced





CITIZENS' LANGUAGE





European Parliament
Directorate-General for
TRANSLATION

Citizens' Language



CITIZENS' LANGUAGE

Clear language

The wording, structure and design are so clear that the intended audience can easily:

- find what they need
- understand what they find
- use that information

Text, audio, video

24 languages

DG TRAD Language Professionals are experts in multilingual



Text



Audio



Video

MOTIVAZIONE

Premessa

Questo rapporto a relazione sulla politica industriale dell'UE cade in un momento drammatico per le attività economiche in tutto il mondo. Le conseguenze economiche del coronavirus hanno determinato uno shock simmetrico su domanda e offerta che non ha precedenti dalla seconda guerra mondiale. La condizione finanziaria delle imprese europee è peggiorata drammaticamente, mettendo in discussione la loro capacità di investire.

Proprio mentre l'Unione si predispondeva ad accelerare due transizioni epocali – quella digitale e quella ambientale – che richiedono fortissimi investimenti privati e pubblici, siamo stati travolti dalla prima pandemia dell'epoca moderna. Per questa ragione il rapporto la relazione propone due fasi ben distinte di politica industriale: la prima, di recovery-ripresa del sistema produttivo, e la seconda di ricostruzione e trasformazione dello stesso. L'individuazione di ecosistemi produttivi in corso da parte della Commissione dovrà essere la linea guida sottostante a ogni iniziativa nel campo della politica industriale, consentendo di selezionare gli interventi, le priorità e coordinando le iniziative nel campo della ricerca, dell'education dell'istruzione e degli investimenti.

La politica industriale portata avanti dall'Unione è stata spesso vaga e teorica. Un combinato disposto di dichiarazioni di principio, scarsità di risorse, eccesso di normative e meccanismi troppo burocratici. Per questo il rapporto la relazione si focalizza sugli strumenti e sulle azioni concrete da intraprendere più che sulle dichiarazioni di intenti. Per avere una politica industriale europea efficace occorre un budget-bilancio europeo all'altezza e risorse aggiuntive provenienti dai budget-bilanci nazionali e dall'emissione di titoli europei. Il tempo delle parole senza fatti è finito. Non possiamo permetterci altre false partenze.

Contesto Internazionale-internazionale – Un'Unione più assertiva

Sappiamo che entrambe le fasi si svolgeranno all'interno di un sistema di relazioni economiche internazionali molto più duro e complesso rispetto a quello degli ultimi trent'anni. Un sistema più chiuso e protezionistico, nettamente diviso tra paesi a economia di mercato e paesi dove il capitalismo di stato è ancora predominante e non di rado aggressivo. Per questa ragione, pur rimanendo saldamente ancorata al principio di libero scambio e al sistema multilaterale, l'UE dovrà predisporre strumenti di difesa commerciale e un sistema di screening degli investimenti esteri più efficienti. Stessa cosa vale per la sicurezza degli approvvigionamenti, anche incentivando meccanismi di reshoring-rilocalizzazione delle filiere produttive strategiche. Allo stesso modo sarà fondamentale che ogni piano di de-carbonizzazione delle industrie europee sia accompagnato da un imposta sul carbonio alle frontiere a-carbon-border-tax che impedisca il-e-d-carbon-like agela cosiddetta rilocalizzazione delle emissioni di carbonio. La negoziazione di accordi di libero scambio dovrà poi riflettere la natura dei mutati rapporti internazionali e gli obiettivi ambientali dell'Unione. Andranno opportunamente selezionate controparti di mercato e inserite clausole sulla sostenibilità ben più stringenti rispetto a quelle attuali.

Fase 1- RecoveryRipresa

Preservare il mercato unico deve essere uno dei pilastri dell'azione dell'Unione nella fase 1. Il mercato interno uscirà più frammentato e squilibrato rispetto alla situazione pre-covid. La

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XM

United in diversity

XM

sospensione parziale degli aiuti di stato ha avvantaggiato i paesi con più disponibilità finanziarie. Occorre agire rapidamente sostituendo gli schemi nazionali di supporto alle imprese e ai lavoratori, con programmi europei, gestiti dalla Commissione. A questo innanzitutto dovrebbe servire il Recovery-fundFondo per la ripresa, privilegiando i paesi dove gli aiuti sono stati meno consistenti e dove l'epidemia ha generato più danni.

L'altro elemento fondamentale della strategia di recovery-ripresa deve essere il sostegno alla ricapitalizzazione delle imprese. Il rapporto equitycapitale/debito si è deteriorato; occorre mettere in campo un supporto fiscale potente e un ingresso diretto nel capitale per le imprese più grandi, con chiare clausole di uscita e di neutralità nelle governance. Il recovery-fundFondo per la ripresa dovrà prevedere una destinazione specifica di risorse a questo scopo.

Ecosistemi produttivi particolarmente colpiti dalle conseguenze del coronavirus – egad esempio- turismo e aviation-aviazione – dovranno beneficiare di una quota maggiore di fondo perduto e di un periodo più lungo del regime speciale degli aiuti di stato.

Fase 2 – Reconstruction and Trasformaticostruzione e trasformazione

L'economia europea ripartirà solo attraverso un potente programma di investimenti pubblici. E' dunque estremamente importante che la sospensione delle regole del patto di stabilità proseguano almeno limitatamente agli investimenti orientati alla digitalizzazione e all'ambientalizzazione.

I finanziamenti previsti nel Green Deal europeo apparivano già prima della crisi del tutto insufficienti per accompagnare la transizione ambientale. Per questa ragione è necessario prevedere la prosecuzione del Recovery FundFondo per la ripresa sotto forma di Recostruction and Trasformation-fundFondo per la ricostruzione e la trasformazione. La struttura degli interventi e dei programmi andrà ridefinita per orientarla in mondo più stringente verso gli obiettivi digitali e ambientali. Un punto deve essere chiaro: senza un potente sostegno europeo fornito da un budget-bilancio rafforzato, dalla prosecuzione del RF-Fondo per la ripresa come Fondo per la ricostruzione e la trasformazioneReT e da una maggiore libertà di investimento degli Stati membri, l'obiettivo di neutralità climatica al 2050 sarà mancato. Insieme al Fondo per la ricostruzione e la trasformazioneReT-Fund, tutti i programmi europei, a partire da Horizon-EuropeOrizzonte Europa, vanno rafforzati e messi in connessione ai piani nazionali. La possibilità di rivedere la normativa sugli aiuti di stato e sulle concentrazioni per, rispettivamente, accelerare, mobilitando un più ampio numero di risorse finanziarie, la transizione industriale, e favorire la nascita di campioni europei deve essere approfonditamente studiata; prevedendo opportuni strumenti di monitoraggio per evitare danni al mercato unico e alla catena dei fornitori.

La vastità, l'ampiezza e la profondità del cambiamento a cui siamo chiamati non deve essere sottovalutata. Pensiamo per esempio all'industria dell'acciaio, fondamentale per tutta la filiera produttiva della meccanica e dell'automotive del settore automobilistico. Per decarbonizzarla occorrerà: 1) prevedere potenti incentivi al cambiamento dei macchinari e delle tecnologie; 2) sovvenzione al prezzo del gas al momento non competitivo per la produzione di acciaio; 3) carbon-border-taximposta sul carbonio alle frontiere per prevenire importazioni inquinanti a basso costo. Come si vede solo un approccio olistico, estremamente costoso può assicurare una transizione verso la riduzione di emissioni senza danno per l'industria europea.

Strumenti e metodologie – Una politica industriale più efficiente

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2/3

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XM



Audio

Listen in!



EUROPARL RADIO ACCUEIL À PROPOS DE NOUS CONTACT

Synthèse de la plénière - Strasbourg, juin II 2022

Au sommaire de cette synthèse: le processus d'élargissement de l'Union européenne, les réserves de gaz avant l'hiver, l'engagement du Parlement pour réduire les émissions de gaz à effet de serre, le débat «C'est l'Europe», et l'extension du certificat COVID numérique européen. Tout ceci sur fond de débats et de votes. Morceaux choisis.

[ÉCOUTER MAINTENANT](#)

DE EN ES **FR** IT SL

audio.europarl.europa.eu

News in Brief

Europese Unie

★★★★★ (22) Beoordeeld ✓

Europese zaken

Nieuws

EN - Engels

The latest news from the European Parliament. Available in 24 official EU languages, every weekday at noon.

The European Parliament and its elected Members are the citizens' voice in the

Home, Map, Search, Heart, Settings icons at the bottom.



Video



DG TRAD as content provider

La première fois que je me suis vraiment sentie européenne,
c'était en 1986.



DG TRAD as content provider




Ennio Giordano
28, Doctor, Palermo, Italy

It was a little scary, because...




Stand with Ukraine

EN - English

 Stand with Ukraine

MENU

Home



[#StandwithUkraine](#)

The EU stands with Ukraine: on this website produced by the European Parliament you can discover how the EU has supported Ukraine, including in its current struggle against Russia.

Following the Revolution of Dignity in 2013-2014, the European Parliament engaged in an unprecedented level of cooperation with the Verkhovna Rada (parliament) of Ukraine in the field of democracy support.



Stand with Ukraine



28 September 2022, 00h00

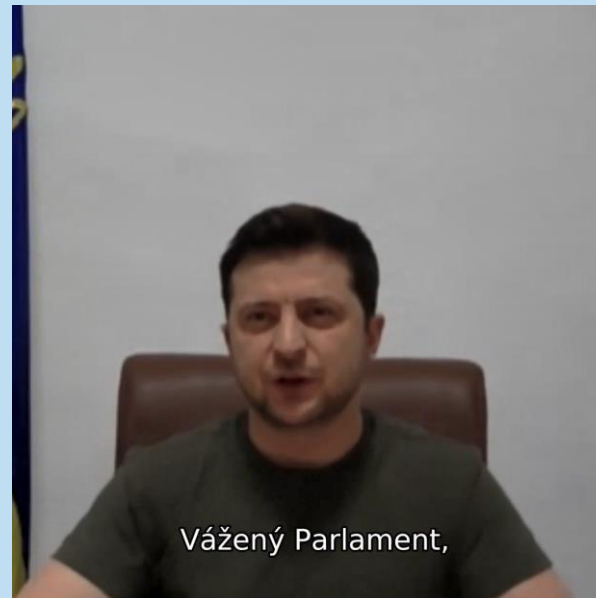
2 min, 18 sec

European Parliament

**Короткі Новини – 2022-09-28 –
українською**



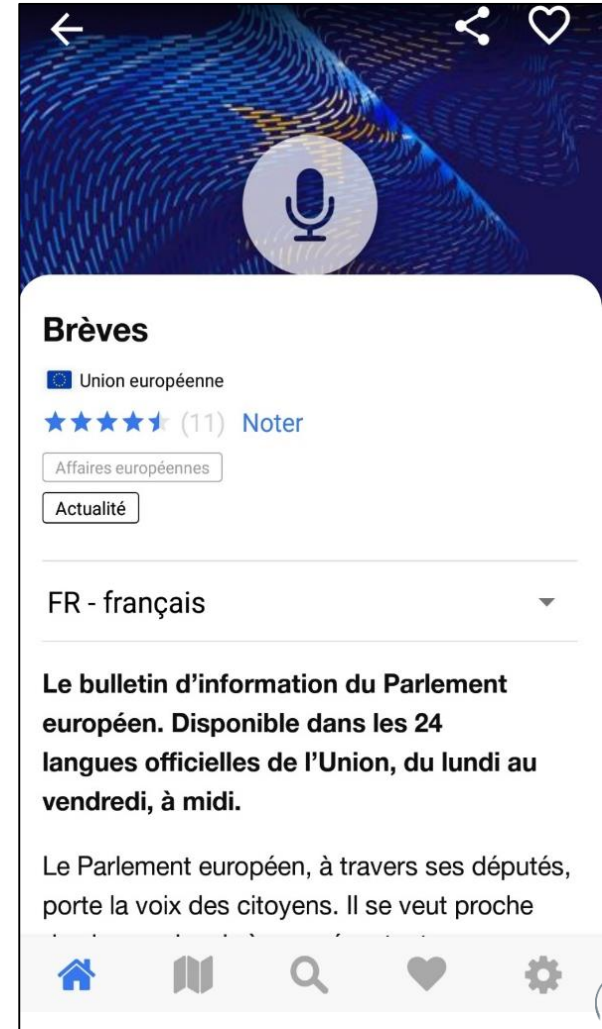
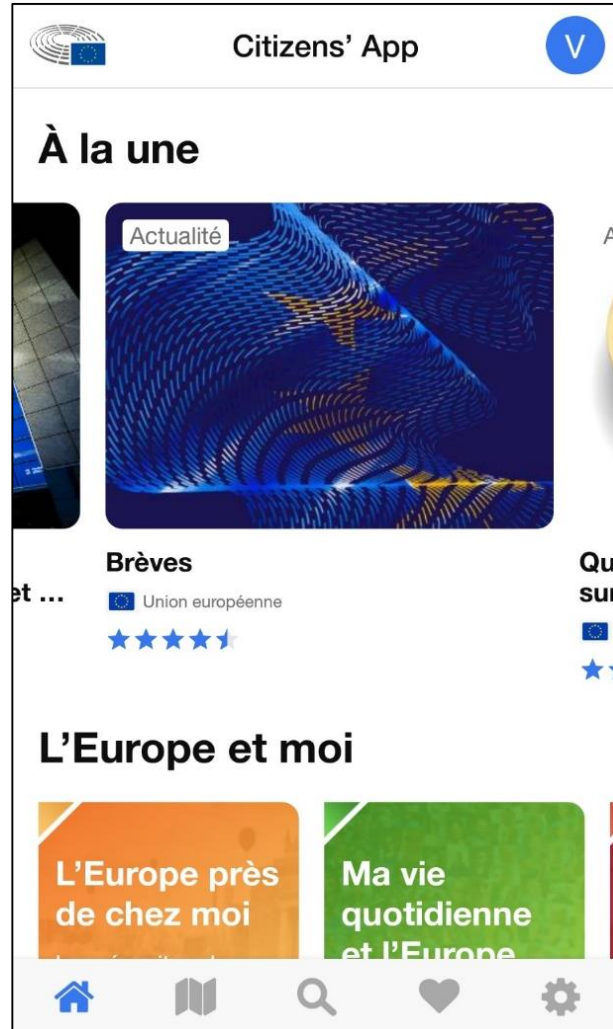
зіткнуться з величезною
військовою машиною Путіна.



Vážení Parlament,



Citizens' App





CITIZENS' LANGUAGE

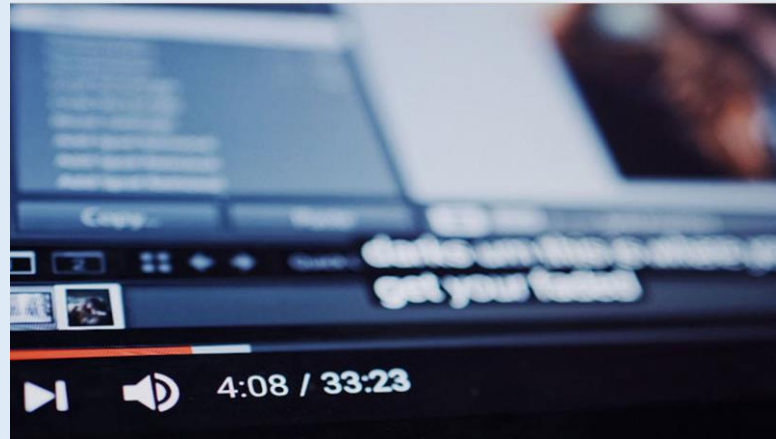




European Parliament
Directorate-General for
TRANSLATION

Citizens' Language

Development of our profession





European Parliament
Directorate-General for
TRANSLATION

Citizens' Language

**Development of our
profession**

Versatile language professionals



Intercultural language professionals



Clear language professionals



Proof-reader language professionals



Legal language professionals



Innovation language professionals



CITIZENS' LANGUAGE





ACCESSIBILITY





European Parliament
Directorate-General for
TRANSLATION

Citizens' Language

Development of our
profession

Accessibility



Future: Accessibility for visitors with hearing and vision loss

Multilingual approach

Online and on-site



European Parliament
Directorate-General for
TRANSLATION

Citizens' Language

Development of our
profession

Accessibility



Europarl websites

EP communication and media content

Visitors programmes

Exhibitions



Accessibility

There are **360 million** people around the world with **hearing loss** and **285 million** people around the world with **vision loss** (WHO).

If we are spending **6 hours of our day** consuming media, what does this mean for those millions of people who can't access all that content?

Accessibility of the Europarl website

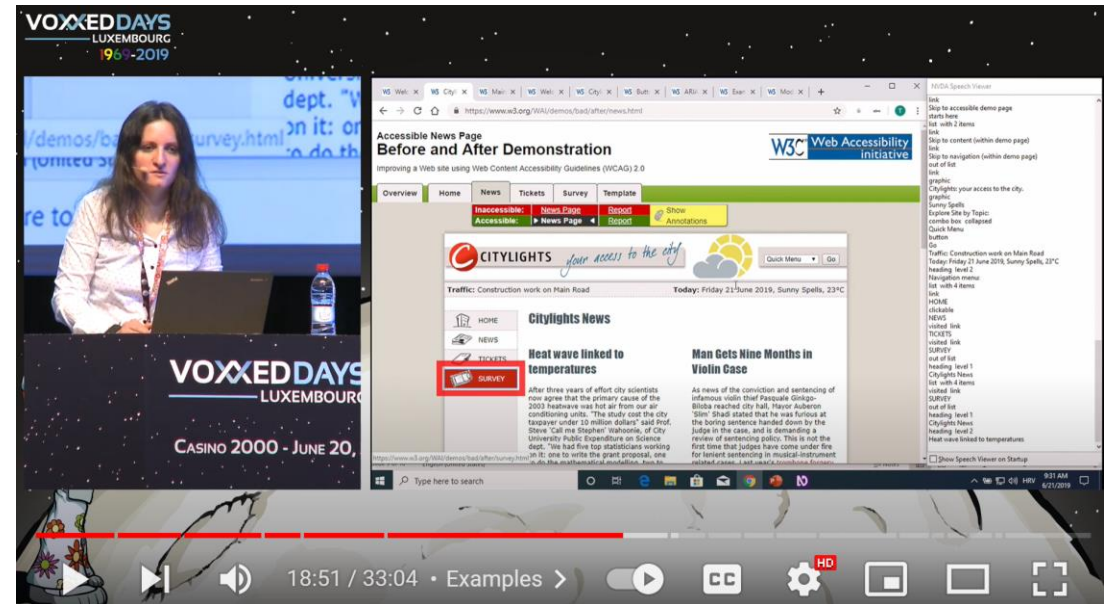
Web accessibility means making sure that people with the widest range of capabilities can easily access information and functions available on the internet.

As a public sector organisation, the European Parliament looks to ensure equal access to information for all users, with or without disabilities, regardless of the device or software they are using and the environment they are working in so that they can use the information, services and tools we provide.

The Parliament is committed to making its websites accessible and we are actively working to improve the user experience for everyone by increasing the accessibility and usability. Part of this work involves ensuring we meet the current standards for our products and content, including those listed in the [EU web accessibility directive \(Official Journal of the EU\)](#) , which entered into force in December 2016.

Accessible content: the four principles of web accessibility (the 'POUR' principles)

- **Perceivable** – content should be available to at least one of the user's senses. For example, images are described with an alternative text for visually impaired users.
- **Operable** – content can be controlled by a variety of tools. For example, using the keyboard only, for people who are not able to use a mouse.
- **Understandable** – use clear and simple language and predictable and consistent interfaces. This helps people with cognitive or reading disabilities.
- **Robust** – the website or app should work well across different platforms, browsers and devices, including assistive technology.



Digital accessibility and user experience - Tanja Kleut

YouTube

The background features a stylized profile of a person's head in white and cyan. To the left, there are two large, thick black curved lines representing sound waves. The background is filled with various geometric patterns, including cyan triangles and black lines forming a grid or perspective effect.

Deaf and hard of hearing

LANGUAGE RECOGNITION
AUTOMATIC TRANSCRIPTION
MACHINE TRANSLATION

Subtitling for the deaf and hard-of-hearing





DG TRAD

Directorate-General

[DG](#) ▾ [DIR A](#) ▾ [DIR B](#) ▾ [DIR C](#) ▾ [DIR D](#) ▾ [Services](#) ▾ [Blogs](#) ▾

[DG Menu](#) ▾ [Launchpad](#) ▾ [Dictionaries](#) ▾ [My Links](#) ▾

INTRALINGUAL GUIDELINES

BG: [Intralingual_SDH_Guidelines_Bulgarian](#)

CS: [Intralingual_SDH_Guidelines_Czech](#)

DA: [Intralingual_SDH_Guidelines_Danish](#)

DE: [Intralingual_SDH_Guidelines_German](#)

EL: [Intralingual_SDH_Guidelines_Greek](#)

EN: [Intralingual_SDH_Guidelines_English](#)

ES: [Intralingual_SDH_Guidelines_Spanish](#)

ET: [Intra- and interlingual_SDH_Guidelines_Estonian](#)

FI: [Intralingual_SDH_Guidelines_Finnish](#)

FR: [Intralingual_SDH_Guidelines_French](#)

GA: [Intralingual_SDH_Guidelines_Irish](#)

HR: [Intralingual_SDH_Guidelines_Croatian](#)

HU: [Intralingual_SDH_Guidelines_Hungarian](#)

IT: [Intralingual_SDH_Guidelines_Italian](#)

LT: [Intralingual_SDH_Guidelines_Lithuanian](#)

LV: [Intralingual_SDH_Guidelines_Latvian](#)

MT: [Intralingual_SDH_Guidelines_Maltese](#)

NL: [Intralingual_SDH_Guidelines_Dutch](#)

PL: [Intralingual_SDH_Guidelines_Polish](#)

PT: [Intralingual_SDH_Guidelines_Portuguese](#)

RO: [Intralingual_SDH_Guidelines_Romanian](#)

SK: [Intralingual_SDH_Guidelines_Slovak](#)

SL: [Intralingual_SDH_Guidelines_Slovene](#)

SV: [Intralingual_SDH_Guidelines_Swedish](#)

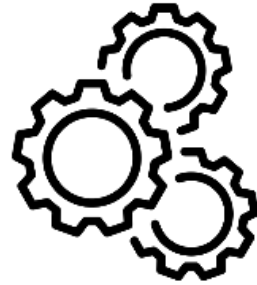
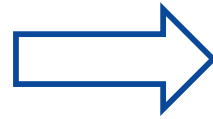
Real-time Speech-to-text and machine translation for 24 Languages



- Accessibility of parliamentary debates
- Additional, useful service for
 - Deaf & Hard of Hearing Community
 - Members
 - Citizens
- Prototype for live transcription and machine translation in 24 languages
- Online tool with multi-device user interface (i.e. laptop, tablet, smartphone)



Components of the tool

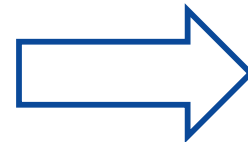


**Language
Identification**



Automatic Speech Recognition

EN live transcription

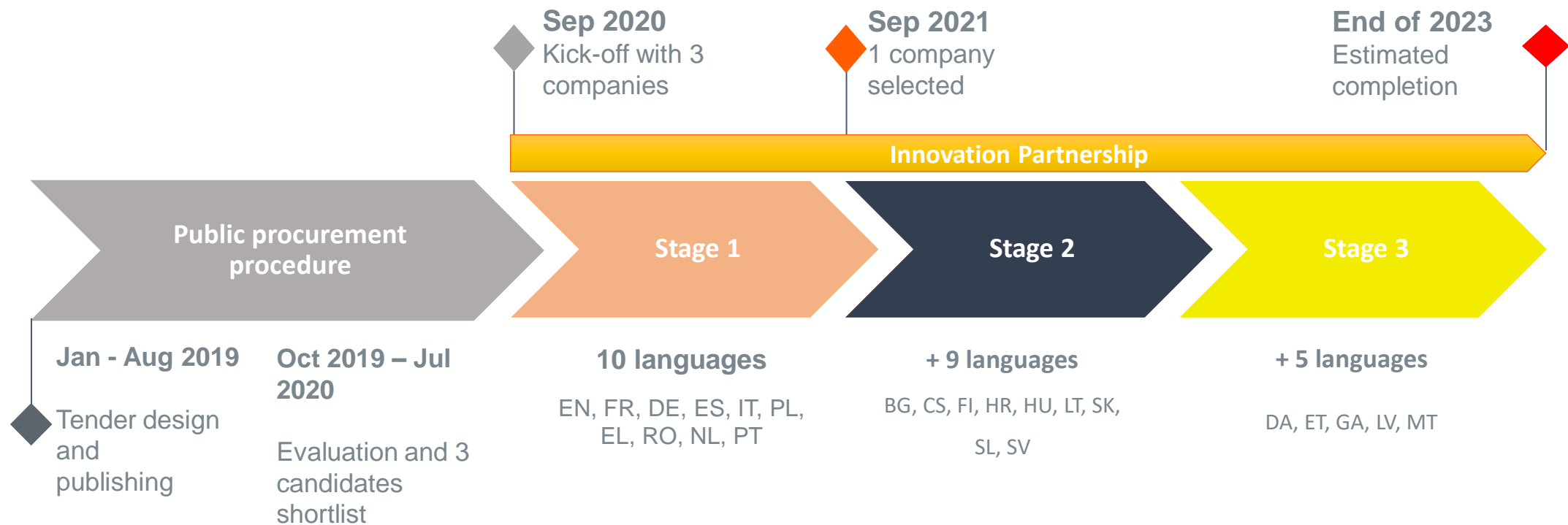


Machine Translation

FR, DE, ES... live transcription



TIMELINE



Real-time speech-to-text coverage

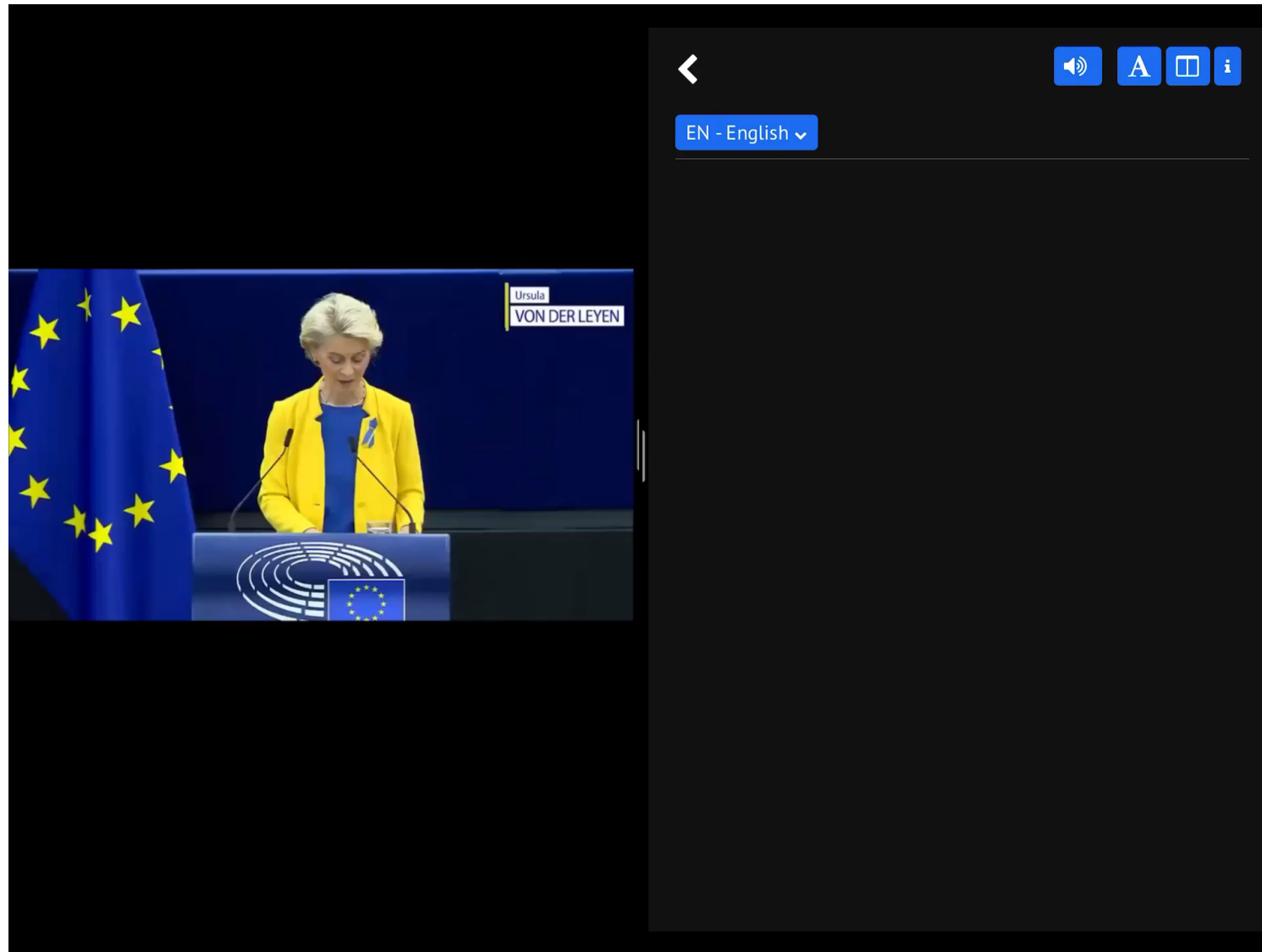


Original language(s) ▾

It will bring forward.
Edouard bring forward.
Covered foreign influence.
It will shed light on shady funding.
We will not allow any autocracies Trojan horses to attack our democracies from within.
For more than 70 years, our continent has marched towards democracy.
But the gains of our long journey, another short.
And many of us have taken democracy for granted for too long.
Especially those who, like me.
Cu lacrimi.
We have never experienced what it means to live under the fist.
Of an authoritarian regime.
Today, we all see that we must fight for democracies.
Every single day, every single minute.
We protect them both from the external threats they face.
But also from the wise that corrode them from within.
It is my Commission's duty and the most noble road protect the rule of law.
So let me assure you we will keep insisting on judicial independence.
And we will make sure that we protect our budget through the conditionality mechanism.
And today I would like to focus on corruption with all its faces.
The face of foreign agents trying to influence our political system.
The face of shell companies or foundations abusing public money.
If we want to be credible when we ask ended countries.
To strengthen their democracies.
We must also eradicate corruption at hope.
We μας ως ευλαβικά it for πάψουν ad hoc.
Graag ga.
This is why, in the coming year, the Commission will present measures to update our legislative framework for fighting corruption.
We will raise standards on offences such as.
Vi bör vara i stånd att sådana offrens Sánchez.
Illicit enrichment.
Trafficking in influence.
Abuse of power beyond the more class offences such as bribery.
And we will also propose to include corruption.
In our human rights sanctions regime.
A new tool to protect our values abroad.



Real-time speech-to-text coverage



The image displays a real-time speech-to-text interface. On the left, a video feed shows Ursula von der Leyen, the President of the European Commission, speaking at a podium. She is wearing a yellow jacket and a blue top. The podium features the European Union flag and the Parliament logo. A nameplate above her reads "Ursula VON DER LEYEN". To her left is the European Union flag. On the right, a dark interface shows a back arrow, a speaker icon, a text size icon (A), a window icon, and an information icon (i). Below these icons is a dropdown menu set to "EN - English".



Real-time speech-to-text coverage

European Parliament

Debate on the State of the Union 2022 (Enhanced version with captions)
14 September 2022, 08:35:00 to 12:20:00

© 2022 Europarl - vucontrol
Version: 2.10.7919.14691

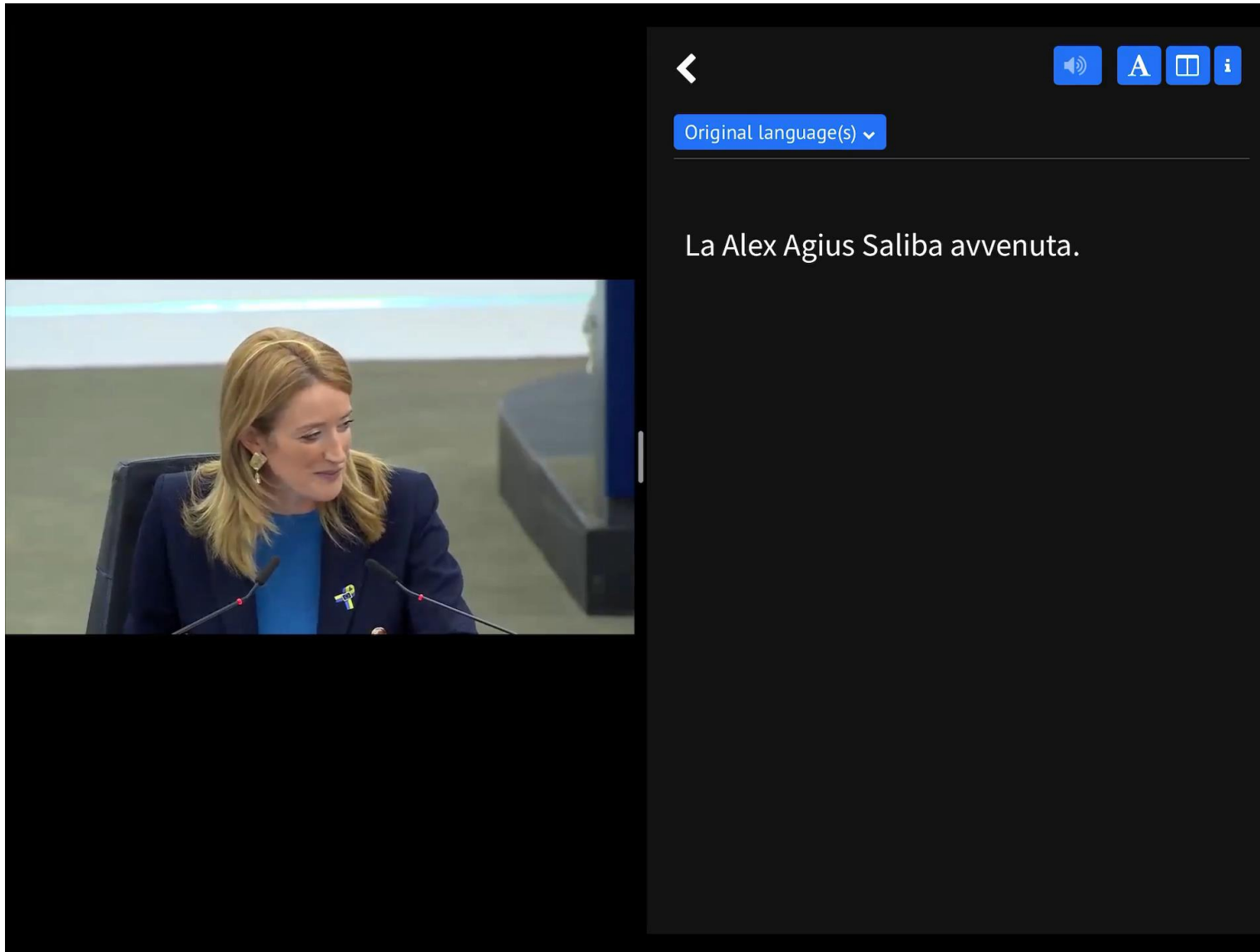
Original language(s) ▾

Again, good morning to all of you, dear colleagues.
First of all, I am pleased.

Ursula von der Leyen



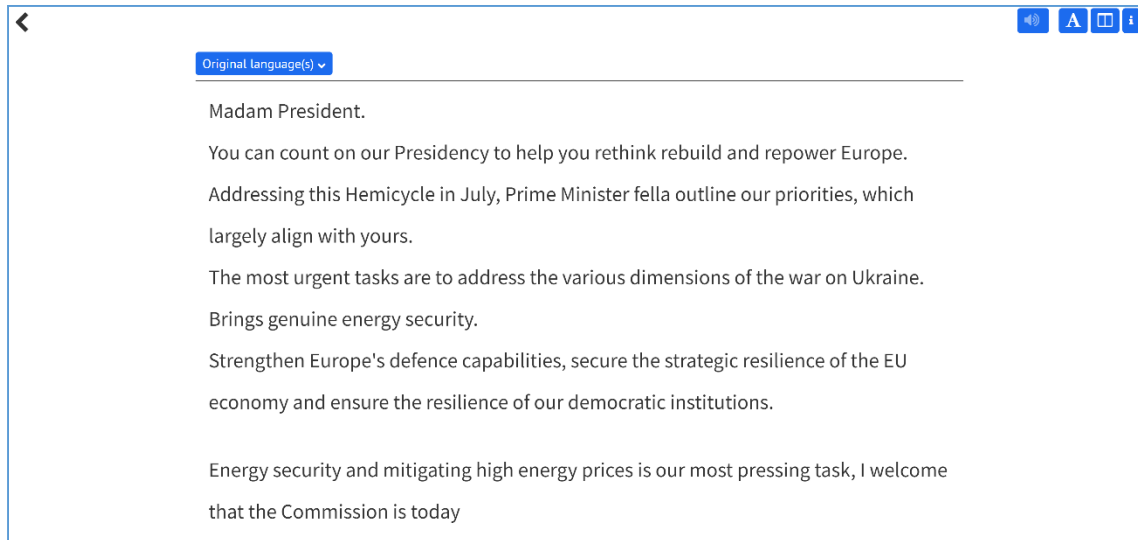
Real-time speech-to-text coverage



The screenshot displays a real-time speech-to-text interface. On the left, a video feed shows a woman with blonde hair, wearing a blue top and a dark jacket, speaking at a podium with microphones. On the right, a dark overlay contains a navigation menu with icons for back, volume, font size, and information. Below these icons is a dropdown menu labeled "Original language(s)" with a downward arrow. The main text area displays the transcription: "La Alex Agius Saliba avvenuta."



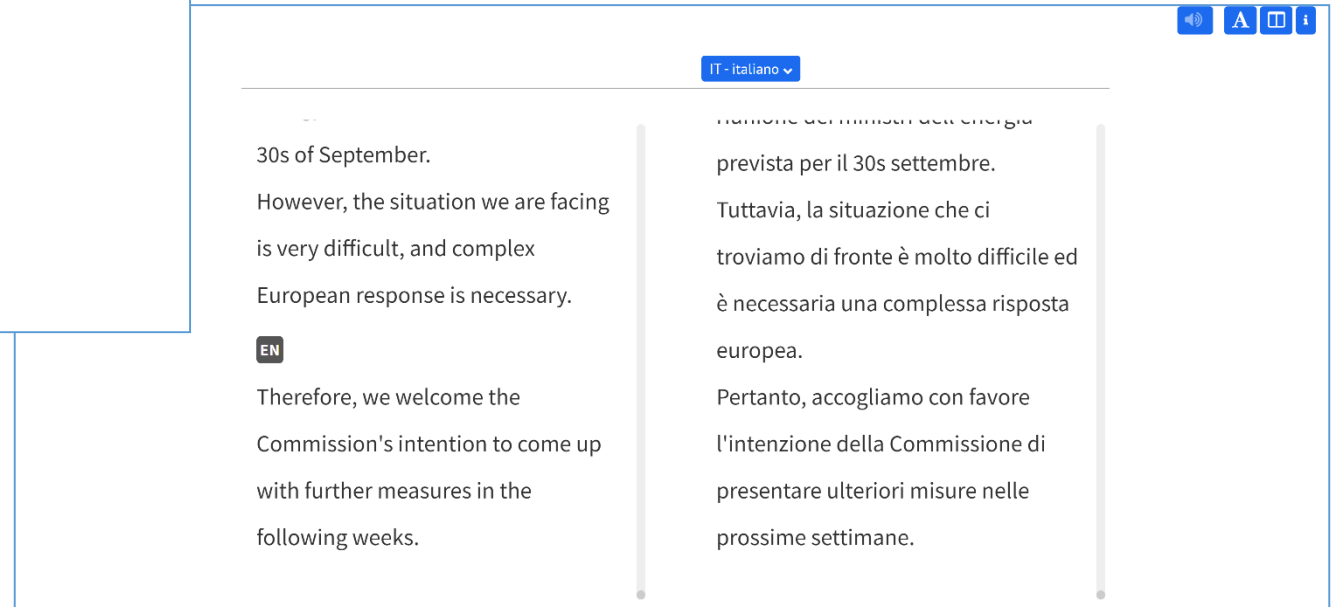
Tool interface examples



Single-language view:

original or machine translation

Double-language view: original and machine translation



Disclaimer

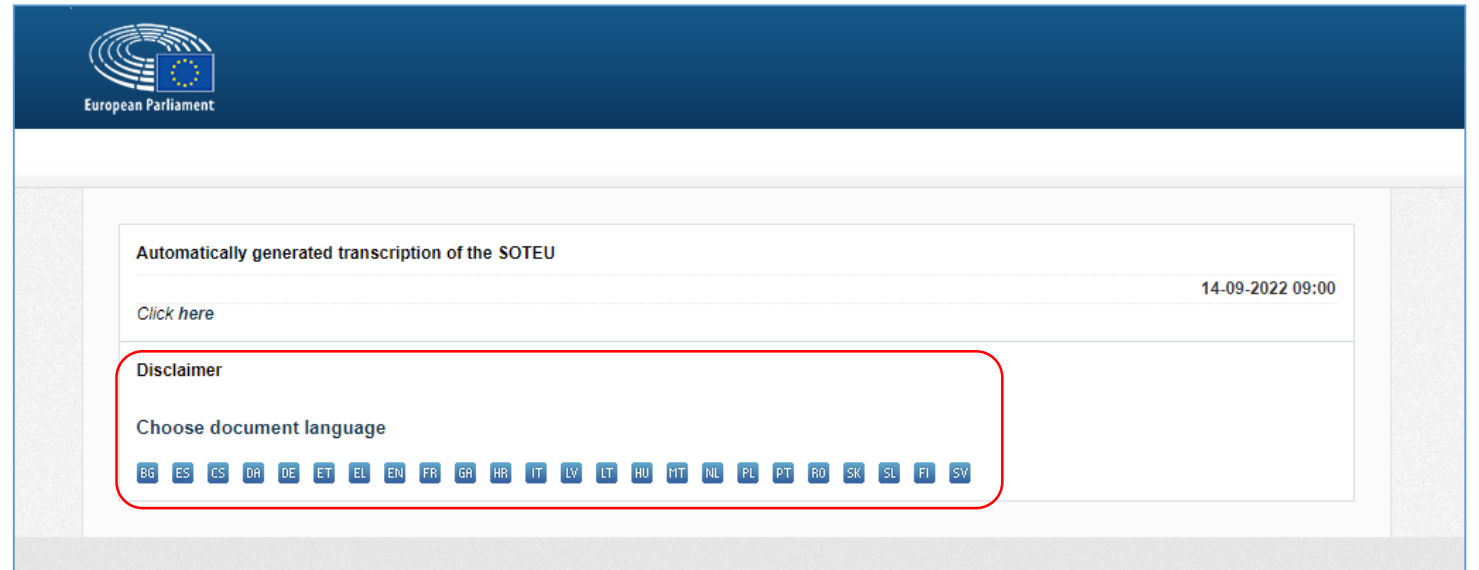
Disclaimer

The real-time transcription and machine translation is automatically generated and does not constitute an authentic record of the event. In meetings with remote participation, the connection may affect the quality of the real-time transcription and machine translation. Accuracy of the real-time transcription and machine translation cannot be guaranteed.

The results of the speech-to-text and machine translation tool are not to be considered as an official transcript of the event. The European Parliament is not responsible for any errors or omissions, or for the results obtained from the use of this information. All information is provided 'as is', with no guarantee of completeness, accuracy, timeliness or of the results obtained from the use of this information.

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I UNDERSTAND



European Parliament

Automatically generated transcription of the SOTEU

14-09-2022 09:00

[Click here](#)

Disclaimer

Choose document language

BG ES CS DA DE ET EL EN FR GR HR IT LV LT HU MT NL PL PT RO SK SL FI SV

Available in **English** on the tool's webpage and in **24 languages** on the Plenary website



Blind and partially sighted people

Audio description (AD)

Voice-over

Audio subtitles

41% of videos are incomprehensible without sounds or captions.

Source: Meta

82% of the world's internet traffic will be video (by 2022)

Source: Cisco

Currently, over 285 million people globally have some vision loss, of whom 39 million are blind.

Source: WHO

Plan: new services



1. Voice-over
 - Voice-recorded translation
 - Mainly for non-fiction content
2. Audio subtitles
 - Voice-recorded subtitles
 - All subtitled products
3. Audio description
 - Voice-recorded
 - Mainly for feature films





Audio subtitles

Voice-over





What is **audio description**?

In simple terms it is the **spoken narrative describing the visual action.**

It is an extra narrative that's mixed in with the original soundtrack.

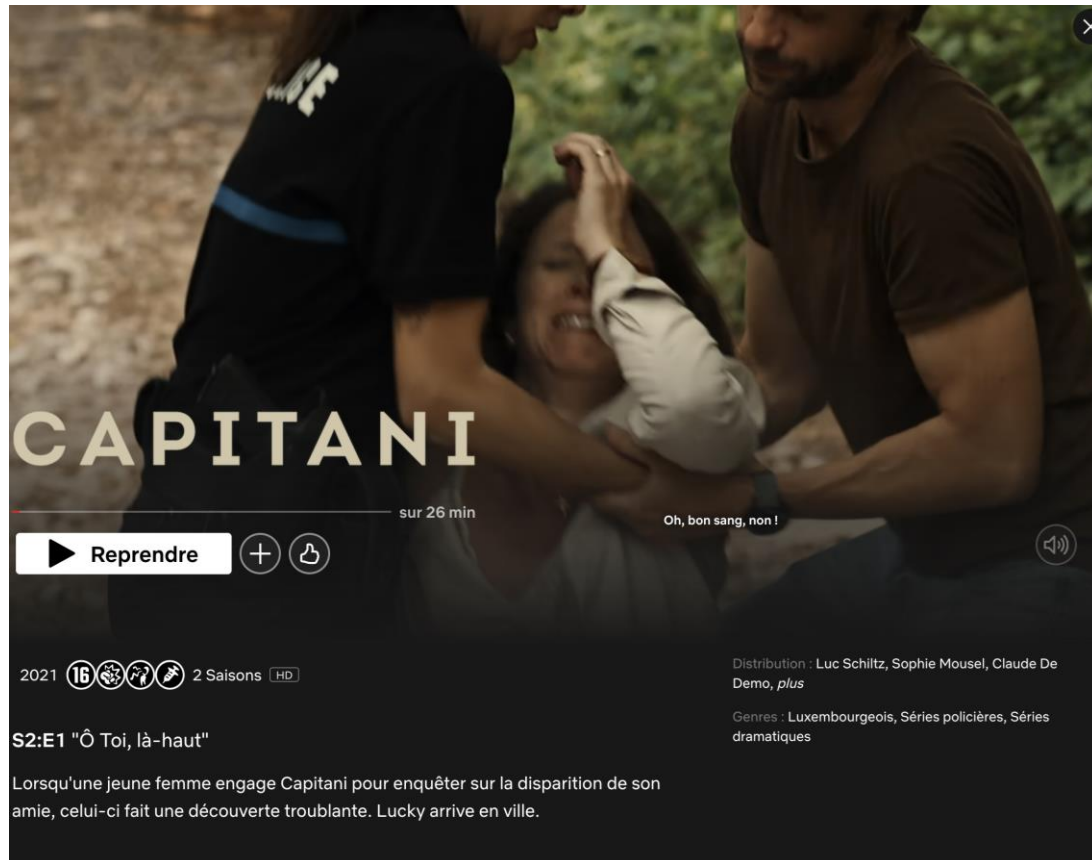
In the gaps between the existing dialogue and sound effects, someone describes the important visual action taking place on screen.

It can also be more detailed, and this is then known as extended audio description.

A good audio described soundtrack will describe **characters, scene changes, and on screen text.**

Source: www.euroblind.org

AD vs. Subtitles



A screenshot of a video player interface for the series 'CAPITANI'. The main image shows a woman in a white shirt being held by two men in a wooded area. The title 'CAPITANI' is overlaid in large white letters. Below the title, it says 'sur 26 min' and 'Oh, bon sang, non !'. There are playback controls including a 'Reprendre' button, a plus sign, a share icon, and a volume icon. At the bottom, there are age ratings (16, 18, 20, 21), '2 Saisons HD', distribution information (Luc Schiltz, Sophie Mousel, Claude De Demo, plus), and genres (Luxembourgeois, Séries policières, Séries dramatiques). A synopsis for episode 'S2:E1 "Ô Toi, là-haut"' is also present.

CAPITANI

sur 26 min

Oh, bon sang, non !

Reprendre + Share Volume

2021 16 18 20 21 2 Saisons HD

Distribution : Luc Schiltz, Sophie Mousel, Claude De Demo, plus

Genres : Luxembourgeois, Séries policières, Séries dramatiques

S2:E1 "Ô Toi, là-haut"

Lorsqu'une jeune femme engage Capitani pour enquêter sur la disparition de son amie, celui-ci fait une découverte troublante. Lucky arrive en ville.



Next steps

- New services for new audiences
 - Voice-over, audio subtitles and audio description
 - For blind and partially sighted people
 - Multilingual production
- Our model
 - In-house linguists
 - Working with locked templates
 - Localisation of European Parliament's content



DGTRAD For Accessibility: Building on solid ground



- Experience in:
 - Adaptations
 - Recording of audio podcasts
 - Multilingual production
 - Matrix project management
- Versatile in-house linguists
- Overcoming challenges

Linguistic challenges

- Multilingual production
- Multiculturalism
- Tone and register

Technical and methodological challenges

- Human and synthetic voices
- Automatic Speech Recognition and Machine Translation
- Synchronicity and style

14:19

**Президент
Європейського
Парламенту**



Роберта МЕЦОЛА

Обов'язок, який я повинна виконати,



CITIZENS' LANGUAGE



 Valter Mavrič

Europe in *YOUR* language

The European Parliament's translation service is now live on the following platforms:



@translationeuropa



@translationeuropa



@translation_eu



European Parliament
Translation Service





Europaparlament
Parlement européen

Thank you! 😊