Towards full digital language equality in a multilingual European Union

Tuesday, 8 November 2022, 09:30 - 11:30
Room SPAAK 7C50 & online via Interactio

Participants’ booklet
STOA WORKSHOP
PANEL FOR THE FUTURE OF SCIENCE AND TECHNOLOGY
Tuesday 08.11.2022 – 09:30-11:30
ROOM SPAAK 7C50 & ONLINE
Registration on www.europarl.europa.eu/stoa

TOWARDS
FULL DIGITAL LANGUAGE EQUALITY
IN A MULTILINGUAL EUROPEAN UNION

#STOAevent

Hosted by
Jordi SOLÉ, MEP and STOA Panel member
with
Yana TOOM, MEP
and Member of the Intergroup on Traditional Minorities,
National Communities and Languages, European Parliament
June LOWERY-KINGSTON, Head of unit
Accessibility, Multilingualism & safer Internet, DG CNECT, European Commission
Andy WAY, Deputy Director, ADAPT Centre, Dublin City University

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1. Introduction

At least 21 European languages are in danger of digital extinction due to a severe lack of technology support, concluded the META-NET 2012 reports prepared by a group of more than 230 experts from all over Europe. For the past decade, the introduction of neural technologies in automatic translation has precipitated a revolution in digital language services, allowing for ever faster and more accurate automatic speech recognition (ASR) and machine translation (MT) results. Yet, a stark imbalance persists in technology support between the five most spoken EU languages (English, French, German, Spanish and Italian), and the remaining 19 official ones. This digital inequality further increases when regional and minority languages are considered, leading to a dearth of online technological support, both in spoken (audio, video) and written (text) form. As digital services become an ever so integral part of our lives, such digital language inequalities could eventually threaten the digital survival of EU languages.

This STOA event aims to explore the research and development environment of language technologies in the context of EU multilingualism. It will present the results of the EU project European Language Equality (ELE), which proposes a roadmap towards achieving full digital language equality by 2030. A panel discussion will ensue, where policymakers will join experts from academia and the industry to discuss challenges and opportunities for digital language equality in the EU. This event is the third in a series of STOA events on language technologies in the EU (the first, in 2013 and the second in 2017). It builds on a STOA study on "Language equality in the digital age", which led to the European Parliament’s Resolution of the same name.
2. Programme

09:30-09:40  Welcome remarks and introductory statement
Jordi SOLÉ, MEP and STOA Panel member

09:40-09:50  European Language Equality 1 and 2: Challenges and opportunities
Andy WAY, Deputy Director, ADAPT Centre, Dublin City University, coordinator of ELE

09:50-10:00  Digital Language Equality in Europe: How are our languages doing?
Maria GIAGKOU, Research Associate, Athena Research Centre, Greece

10:00-10:05  Example 1: Technology Support for Irish
Teresa LYNN, Research Fellow, Dublin City University, Ireland

10:05-10:10  Example 2: Technology Support for Bulgarian
Svetla KOEVA, Professor, Bulgarian Academy of Sciences, Bulgaria

10:10-10:15  Example 3: Technology Support for Basque
German RIGAU, Associate Professor, Universidad del País Vasco, Spain

10:15-10:30  Recommendations towards full Digital Language Equality by 2030
Georg REHM, Principal Researcher, DFKI GmbH, Berlin, co-coordinator of ELE

10:30–11:25  Panel discussion and Q&A
Moderated by Andy WAY, Deputy Director, ADAPT Centre, Dublin City University

Yana TOOM, MEP and Member of the Intergroup on Traditional Minorities, National Communities and Languages, European Parliament

Magdalena PASIKOWSKA-SCHNASS, Policy Analyst, EPRS, European Parliament

June LOWERY-KINGSTON, Head of unit Accessibility, Multilingualism & safer Internet, DG CNECT, European Commission

Barbara PLANK, Professor of AI, LMU München, Germany

11:25–11:30  Closing remarks
Jordi SOLÉ, MEP and STOA Panel member

The event will be held in English, with interpretation in DE, FR, IT and ES. The event will be webstreamed. The link will be published on the event page.
3. Welcome and opening

3.1. Jordi SOLÉ, MEP and STOA Panel member

Jordi SOLÉ was born in Caldes de Montbui, where he was mayor for 12 years. In 2011, he assumed the responsibility for international relations in the national executive of Esquerra Republicana, and in 2012, he became the Secretary General of the European Free Alliance. In 2012, he was elected member of the Parliament of Catalonia, where he became President of the Committee on Foreign Affairs, European Union and Development Cooperation until 2015. In 2016 I joined the Catalan Government, the Generalitat de Catalunya, as Secretary for Foreign Affairs and European Union in the Council of Foreign Affairs, Institutional Relations, and Transparency.

From January 2017 to June 2019 he was a Member of the European Parliament for the Greens-EFA group. In July 2020 he rejoined the European Parliament as an MEP. In the current legislature, he is a full member of the Committee on Foreign Affairs (AFET) and the Subcommittee on Human Rights (DROI), and a substitute member of the Committee of Inquiry into the use of Pegasus and equivalent surveillance spyware (PEGA) and the Committee on Industry, Research and Energy (ITRE). He is also Vice-Chairman of the Delegation for relations with the countries of the Andean Community (DAND), a full member of the Delegation for relations with the Maghreb (DMAG), the Delegation to the Parliamentary Assembly of the Union for the Mediterranean (DMED), the Delegation to the Euro-Latin American Parliamentary Assembly (DLAT) and an alternate member of the Delegation for relations with People’s Republic of China (D-CN).
4. Speakers

4.1. Yana TOOM, MEP and Member of the Intergroup on Traditional Minorities, National Communities and Languages

Yana TOOM was born in Tallinn in 1966. She studied Russian philology in Tartu University. However, she did not graduate from the university because of the birth of her children.

After the restoration of independence to the Republic of Estonia, she left for Chelyabinsk Oblast in Russia with her husband, who had also been studying in Tartu but was not granted residency in Estonia. She returned in 1994, having dreadfully missed Tallinn, and she joined the newspaper Molodyozh’ Estonii as a correspondent. She worked for the newspaper for two years and then took a position in the weekly newspaper Den’ Za Dnem, where she became editor-in-chief in 1999. In 2006, she transferred to the same position in the newspaper Vesti Nedeli.

Yana Toom joined Keskerakond (the Centre Party) in 2008. She worked as chief editor for the Tallinn newspaper Stolitsa. In 2010, she became Vice-Mayor of Tallinn for Culture, Education and Sport; she became a Member of the Riigikogu in 2011. In 2014, she became a Member of the European Parliament, since 2014 she is serving her second term in the European Parliament.

Her positions in European Parliament: Vice-Chair in Committee on Petitions (PETI), Member in Committee on Civil Liberties, Justice and Home Affairs (LIBE) and in Delegation to the EU-Russia Parliamentary Cooperation Committee, Substitute member in Committee on Regional Development (REGI); Committee on Legal Affairs (JURI); Committee of Inquiry to investigate the use of Pegasus and equivalent surveillance spyware (PEGA); Delegation for relations with Iraq.
4.2. June LOWERY-KINGSTON, Head of unit Accessibility, Multilingualism & Safer Internet, DG CNECT, European Commission

June Lowery-Kingston is Head of Unit and the Deputy to the Director at the European Commission’s DG for Communications Networks, Content & Technology (DG CNECT). She obtained a Master of Arts in German and Arabic at the University of St. Andrews (Scotland, UK). Ms Lowery-Kingston started her EU career as Administrator at the Publications Office of the EU in Luxembourg in 1996. She left this Directorate in 2016 after two experiences as Head of Unit, and joined DG CNECT in January 2017 as Head of Finance and Administration. Finally, since July 2018, she is Head of Unit Accessibility, Multilingualism and Safer Internet (CNECT.G.3).

Her current responsibilities include web accessibility, language technology and online safety for children, and aims at making the digital world multilingual for all. As Equality Coordinator in DG CNECT, she also maintains an overview of the implementation of the Union of Equality within the DG. She is passionate about her job, and about making the digital world safer for children, and more accessible, inclusive and multilingual for all.

She has been involved in a variety of projects and presentations, such as “Business cross borders-language obstacles in the Single Market”, the ELRC Technology Workshop “Simplify Language - Capture Audience”, and the 5th ELRC Conference “Europe needs multilingualism”.

Keynote message

We are convinced that language technologies offer unprecedented opportunities to overcome language barriers in the Union – with both economic and social impact. Wouldn’t it be wonderful if language technologies could automatically produce easy to read versions of official communications, not only in all languages, but also for those with reading difficulties or cognitive impairment? If we could offer our population a Star Trek style universal translator, where you could speak and be understood in any language? We are not there yet, but we hope the Commission’s actions will bring these dreams closer to reality in the next few years.
4.3. Magdalena PASIKOWSKA-SCHNASS, Policy Analyst, DG EPRS

After having completed a Master degree in translation and linguistics at the Warsaw University, I resumed linguistic studies at the Paris-IV Sorbonne University to prepare a DEA thesis on comparative translation. Some years later, I took a practical course in translation at Paris-III Sorbonne Nouvelle University. A course in Yiddish at Paris-V University opened my eyes to endangered languages, their richness and importance for European culture and linguistic diversity.

After some years in translation services, I moved to the EPRS where I work as a policy analyst in charge of cultural policies, minority and regional languages and Holocaust Remembrance Day publications. A number of my EPRS publications deal with minority and regional languages as well as IT contribution to promote and preserve European linguistic diversity.

**Keynote message**

Each language offers a specific vision of the world and life. The diversity of the representations of the life around us from various perspectives is a shared wealth of human knowledge as reflected in the vocabulary and linguistic structure of thousands of languages spoken on our planet. We lost a huge part of this resource in Europe, and should not refrain from any effort to save what is still left of it, to carefully preserve and revive endangered languages on our continent. Going to every effort to have a digital trace of these languages is challenging, but it will let us turn it into a tool to let the minority and lesser-used languages live and thrive.
4.4. Andy WAY, Deputy Director, ADAPT, Dublin City University

Prof. Andy Way is the Deputy Director of ADAPT, the world-leading SFI Research Centre for AI-Driven Digital Content Technology. He graduated with a B.Sc.(Hons) in 1986, a M.Sc. in 1989, and obtained his PhD in 2001 from the University of Essex (Colchester, United Kingdom). From 1988-91, he worked at this University, on the Eurotra MT project. He joined the Dublin City University (DCU) in 1991 as Full Professor in the School of Computing. He was the recipient of the 2015 DCU President's Research Award for Science and Engineering; then, in 2019, he got the Award of Honour from the International Association for Machine Translation (IAMT) for his services to the community.

Prof. Andy Way was the Principal Investigator for Integrated Language Technologies in CNGL. He became then Deputy Director of the CNGL for Intelligent Content at DCU, which was in 2015 replaced by the ADAPT Centre for Digital Content Technology. He was also Editor of the Machine Translation journal from 2007-14, and President of the IAMT and its European association (EAMT).

Prof Way’s research interests include all areas of Machine Translation Computational Linguistics: statistical MT, example-based MT, neural MT, etc. Prof. Way has been lead researcher on 13 EU projects, including 2 current projects coordinated by him: ELE, and SignON.

Prof. Way has published over 400 peer-reviewed papers, and over 8,300 citations for his research.

Keynote message

The 2018 STOA report authored by Jill Evans endorsed language equality in the digital age, so that all EU citizens can benefit from a level playing field and full access to services in their own language(s). One of the recommendations of that report was the establishment of "a large-scale, long-term coordinated funding programme for research, development and innovation in the field of language technologies, at European, national and regional levels, tailored specifically to Europe's needs and demands". Phase I of the European Language Equality (ELE) project set out to establish via cutting-edge desk research and engagement with key stakeholders in all EU countries the firm empirical foundations for justifying that funding programme: "ELE Programme". Bringing the 2012 META-NET white papers up to date, and extending the range of languages tackled, this effort has been supported by the entire EU Language Technology landscape, with key stakeholders from industry, academia, and influential pan-European networks, initiatives and associations. Based on a range of novel technological and contextual factors, the ELE project has created the DLE Metric which clearly demonstrates via an intuitive visualisation tool the state of digital readiness of 90 EU languages. The ELE project has shown that apart from a few obvious cases, almost all European languages lack the key tools and resources required to establish Digital Language Equality (DLE) by 2030. Given these findings, ELE has developed a Strategic Research, Innovation and Implementation Agenda, and a Roadmap, to ensure DLE for all EU languages by the end of the decade.
4.5. Georg REHM, Principal Researcher, DFKI GmbH, Berlin

Prof. Dr. Georg Rehm works as a Principal Researcher in the Speech and Language Technology Lab at the German Research Center for Artificial Intelligence (DFKI), in Berlin, Germany. He holds an MA. in Computational Linguistics and Artificial Intelligence, Linguistics and Computer Science from the University of Osnabrück (1999), and completed his Ph.D. in Computational Linguistics at the University of Gießen (2005).

Georg Rehm worked at the University of Tübingen, leading projects on the sustainability of language resources and technologies. He then joined DFKI in early 2010. In addition to these positions, Georg Rehm is the General Secretary of META-NET, a Network of Excellence dedicated to building the technological foundations of multilingual European information. He also serves as the Secretary of the European Chapter of the Association for Computational Linguistics (EACL).

Georg Rehm’s research is spread across various topics in Natural Language Processing and Computational Linguistics. He is currently involved in a number of national and international research, such as European Language Equality (ELD), DataBri-X, HumanE-AI-Net. He was in the past the Coordinator of the projects European Language Grid (ELG).

Georg Rehm has authored, co-authored or edited more than 230 research publications.

Keynote message

Following up the groundbreaking work of the META-NET Language White Papers published in 2012, the most recent results of the project ELE have shown that almost all European language are significantly under-resourced when it comes to the availability of digital language technologies and language resources including data sets. The worst case scenario is that some or maybe even most of these languages will eventually suffer from digital language extinction if the EU is not addressing the matter properly. With the Strategic Research, Innovation and Implementation Agenda, we recommend initiating the ELE Programme as a long-term, large-scale funding programme for the development of technologies and resources for all European languages so that all speakers of all languages can benefit from these digital technologies when using modern information technologies. At the same time, the ELE Programme is targeted to help coordinate the European Language Technology community, which is highly fragmented. With the help of such a coordinated programme and recently launched infrastructures such as ELGand the forthcoming Language Data Space (LDS), many synergies can exploited, for example, when it comes to the systematic development of large language models for all European languages.
4.6. Svetla KOEVA, Professor, Bulgarian Academy of Sciences

Dr Svetla Koeva is a professor of Computational Linguistics and the head of the Department of Computational linguistics at the Institute for Bulgarian Language, Bulgarian Academy of Sciences. She obtained a Ph.D. in Structural Applied and Mathematical Linguistics in the Institute for Bulgarian, Sofia. Her research interests lie in the field of computational linguistics, formal description of language: morphology and syntax, lexical-semantic networks and ontologies. She is the principal investigator in the development of various language resources for Bulgarian such as: Bulgarian WordNet, Bulgarian FrameNet, Bulgarian National Corpus, Multilingual Image Corpus (MIC 21), text processing chain, etc.

Svetla Koeva has published 5 books and over 200 research publications. She has lead numerous research projects among which currently are: Curated Multilingual Language Resources for CEF AT, European Language Equality Phase 2, Enriching the Semantic Network WordNet with Conceptual Frames, The ontology of the stative situations in the models of language. Since 2013 Svetla Koeva leads the campaign The Written Word Remains, Write Correctly! for promoting the study and research of the Bulgarian language.

Svetla Koeva served as the Director of the Institute for Bulgarian Language from 2012 until 2021. Currently she is the chair of the Research Council of the Institute for Bulgarian Language. She also is the head of the National Competence Centre at the European Language Grid. Svetla Koeva is also the editor in chief of the Annual Papers of the Institute for Bulgarian Language and the weekly edition The Written Word Remains. Write Correctly!. Svetla Koeva has been awarded four prizes by the National Science Fund at the Ministry of Education and Science and the Bulgarian Academy of Sciences.

Keynote message

The vision for the future is high-quality language technologies for all European languages that supports political and economic unity through cultural diversity. Many language technologies are still not available for Bulgarian (human-computer interaction, multimodal processing, language generation, etc.). Speech and text technologies have to be coupled with technologies for other modalities: real time image and video processing working simultaneously in a multilingual environment. Digital Bulgarian needs a large-scale, long term support, harmonised with the support for all European languages.
4.7. Barbara PLANK, Professor of AI, LMU München

Barbara Plank is a full professor for AI and Computational Linguistics at [LMU Munich](https://www.lmu.de), where she leads a research lab in Natural Language Processing at the [Center for Information and Language Processing](https://www.cilp.de). In addition to this position, Prof. Plank is also part-time professor at the [IT University of Copenhagen](https://it.ceu.edu), and co-leads [NLP North](https://www.nlpnorth.eu).

She obtained a Master of Science at the [Free University of Bozen-Bolzano](https://www.unibz.it) (Italy) in 2006, and a second Master of Science at the [University of Amsterdam](https://www.uva.nl) (the Netherlands) in 2007. Then, she got a Ph.D. at the [University of Groningen](https://www.rug.nl) (the Netherlands) in 2011. She worked as Assistant Professor and Postdoctoral Researcher at the [University of Trento](https://www.units.it) (Italy), the University of Copenhagen (Denmark), and the University of Groningen, from 2011 to 2018.

She was Head of the Master program in Data Science at the University of Copenhagen from 2020 to 2022, where she is still a Full Professor. Finally, in April 2022, she has become Chair for AI and Computational Linguistics at the Ludwig-Maximilians-Universität München.

She is also President of the Northern European Association for Language Technology ([NEALT](https://www.nealt.eu)).

Barbara Plank’s research interests include learning under sample selection bias, under limited date, and multimodal learning. She is currently working on a variety of on-going projects funded by the Munich Center for Machine Learning, Danmarks Frie Forskningsfond Sapere Aude Research Leader Program, Danmarks Frie Forskningsfond Project 1 and most recently, an ERC Consolidator grant.
4.8. German RIGAU, Associate Professor, Universidad del País Vasco

German Rigau is Associate Professor at the Faculty of Informatics, member of the IXA research group and deputy director of the Basque Center for Language Technology (HITZ) of the University of the Basque Country (UPV/EHU). His interests are Natural Language Processing and Artificial Intelligence, Semantics and Knowledge Representation and Reasoning.

Prof Rigau is president of the executive committee of the Global WorldNet Association (GWA), board member of the ELRA Language Resource Association (ELRA) and member of the permanent committee of the Sociedad Española de Procesamiento del Lenguaje Natural (SEPLN). Since 2022, he is the Spanish representative of the European Strategic Forum for Research Infrastructures (ESFRI) Strategic Working Group on Social and Cultural Innovation. Advisor since its inception in 2015 of the Plan de Impulso a las Tecnologías del Lenguaje organized by the Secretary of State for Digital Advancement (SEAD) and co-editor of the “Informe sobre el estado de las tecnologías del lenguaje en España dentro de la Agenda Digital para España”. He lead the strategic network INTELÉ towards the integration of Spain into the CLARIN and DARIAH European research infrastructures. Currently, he leads one of the core partners of the European Languages Equality 2 (ELE2) project towards achieving digital language equality in Europe by 2030.

Keynote message

Language Technology (LT) (together with vision and robotics) is one of the most important AI application areas with a fast growing economic impact. Unfortunately, LT is not equally developed for all European languages. There is an abysmal distance between the best supported languages and the minimally supported ones (for instance, minority and regional languages). There is a lack of adequate LT policies and sustainability plans at the European and the different national levels to properly support the European languages through LT. There is an immense need to reinforce the European leadership in LT by creating a specific pan-European programme tailored to Europe’s needs and demands. To successfully turn a linguistically fragmented Europe into a truly unified and inclusive one, fully supporting our rich and diverse linguistic cultural heritage.
4.9. Maria GIAGKOU, Research Associate, Athena Research Centre

Maria Giagkou is a Research associate at the Institute for Language and Speech Processing (ILSP) of the Athena Research Centre, Greece, since 1998. She graduated from a Bachelor’s degree in Greek Philology in 1998 (Aristotle University of Thessalonik), and got a Master’s degree in Language Technology two years later (National and Kapodistrian University of Athens). She finally obtained a Ph.D. in Linguistics in 2009 (National and Kapodistrian University of Athens).

Her research interests include Language Technology, Language Resources, Corpus Linguistics and Technology-Enhanced Language Learning. Since she has been at the ILSP for 24 years, she has participated in more than 20 R&D national and European projects as core member of the respective research teams or as site project manager and coordinator. She is currently managing the project “Action on CEF Automated Translation Core Service Platform” (ELRC3). Finally, she is the scientific coordinator and project manager for ILSP of the European Language Equality project (ELD).

Maria Giagkou has published mainly on computational text processing for the extraction of morphological, syntactic and lexical features and automated readability assessment for Greek L1 and L2 speakers, language resources and data sharing infrastructures.

Keynote message

The advent of deep learning and neural networks over the past decade have yielded results unforeseeable before in the field of Language-centric AI. However, is this remarkable progress equally evidenced across all languages? Empirical evidence drawn from an extensive catalog of language resources and tools, the European Language Grid, suggest overwhelming disparities among the 87 national, regional and minority European languages we investigated. Except for English and for only a few “big” languages, i.e., German, French and Spanish, all other European languages are fragmentarily supported by technology or not at all.

The remarkable progress that has been achieved in Language Technology and Language-centric AI, currently benefits only the speakers of “big” languages. Speakers of smaller languages are deprived of their fundamental right as European citizens to use their own language in their digital lives. The abysmal distance between big and small languages needs to be ideally eliminated, if not at least reduced, in order to move towards Digital Language Equality and avert the risks of digital extinction.
4.10. Teresa LYNN, Research Fellow, Dublin City University

Teresa Lynn is a Research Fellow and Manager at the Adapt Centre. She first obtained her Bachelor of Science in Applied Computational Linguistics in 2002 at the Dublin City University. Then, she obtained a double Ph.D. in Computational Linguistics at the Dublin City University and the Macquarie University (Sydney, Australia), and was a recipient of the 2014-2015 Enterprise Ireland Fulbright Award, carrying out research at Saint Louis University, Missouri, USA.

Teresa Lynn has had several experiences in computational sciences, starting with a position of Translation Memory Engineer at SimulTrans (2005-2006). From 07/2007-12/2007 she was Senior Project Manager at Meaningful Exchange, following by another experience of Senior Computational Linguist at ToggleText. Teresa Lynn also worked at Appen as Computational Linguist and Project Manager, before starting her PhD. Since she finished her PhD, Teresa Lynn has been Postdoctoral Researcher at the ADAPT Centre and then Research Fellow and Manager.

She is currently working on the European Language Equality Project (ELE), the Principal Investigator on the 2017-2023 GaelTech Project, which covers various research topics in Irish NLP. She has also been part of ADAPT’s ongoing involvement with a number of European Commission projects: ELRC, ELRI, and PRINCIPE, focusing on improving machine translation for EU languages at public administration level. Other projects include the National Digital Plan for Irish and the Universal Dependencies Project.

Her main research interests lie in developing tools and resources for Irish language technology.

**Keynote message**

The Irish language, along with Maltese, is the most under-resourced official EU language in terms of speech and language technologies. Not only are basic relevant technologies lacking, but also the underlying resources required to address this gap. We note how EU funding has proven invaluable for advances in English-Irish machine translation, while some steps have been taken towards ASR and basic NLP resource development through national funding. However, a dedicated funding programme and clear R&D strategy is required to ensure that the language averts the risk of digital extinction.
5. About STOA

5.1. Mission
The Panel for the Future of Science and Technology (STOA) forms an integral part of the structure of the European Parliament. Launched in 1987, STOA is tasked with identifying and independently assessing the impact of new and emerging science and technologies.

The goal of its work is to assist, with independent information, the Members of the European Parliament (MEPs) in developing options for long-term, strategic policy-making.

The STOA Panel
The STOA Panel consists of 27 MEPs nominated from eleven permanent parliamentary committees: Agriculture & Rural Development (AGRI), Culture & Education (CULT), Employment & Social Affairs (EMPL), Environment, Public Health & Food Safety (ENVI), Internal Market & Consumer Protection (IMCO), International Trade (INTA), Industry, Research & Energy (ITRE), Legal Affairs (JURI), Civil Liberties, Justice and Home Affairs (LIBE), Regional Development (REGI) and Transport & Tourism (TRAN).

Eva KAILTI is the European Parliament Vice-President responsible for STOA for the second half of the 9th parliamentary term. The STOA Chair for the second half of the 9th parliamentary term is Christian EHLER, with Ivo Hristov and Ivars IJABE elected as 1st and 2nd Vice-Chairs, respectively.

The STOA approach
STOA fulfils its mission primarily by carrying out science-based projects. Whilst undertaking these projects, STOA assesses the widest possible range of options to support evidence-based policy decisions. A typical project investigates the impacts of both existing and emerging technology options and presents these in the form of studies and options briefs. These are publicly available for download via the STOA website.

Some of STOA’s projects explore the long-term impacts of future techno-scientific trends, with the aim to support MEPs in anticipating the consequences of developments in science. Alongside its production of ‘hard information’, STOA communicates its findings to the European Parliament by organising public events throughout the year. STOA also runs the MEP-Scientists Pairing Scheme aimed at promoting mutual understanding and facilitating the establishment of lasting links between the scientific and policy-making communities.

Focus areas
STOA activities and products are varied and are designed to cover as wide a range of scientific and technological topics as possible, such as artificial intelligence, blockchain, 5G, genetic engineering, antimicrobial resistance, internet addiction, face recognition, pollution, sustainable agriculture, Covid-19 and health in general.

These activities are clustered within three main thematic areas: Artificial intelligence & other disruptive technologies, The new Green Deal, and Quality of life. In addition, STOA’s work addresses four cross-cutting policy areas: Science, technology and innovation; Societal and ethical challenges; Economic challenges; and Legal challenges.
ESMH

The European Science-Media Hub (ESMH), operating under the political responsibility of the STOA Panel, is a platform to promote networking, training and knowledge sharing between the European Parliament, the scientific community and the media. The ESMH creates a network among policy-makers, scientists and media involving science, academia, educational and research entities, and professional associations of journalists and scientists.

For journalists and media representatives, the ESMH organises training sessions and workshops on current technological developments, both as subjects of their reporting and as means of facilitating their work. Via media monitoring and media intelligence tools, the ESMH follows the most popular topics in the field of science and technology on different platforms including journals, newspapers and social media.

The ESMH makes information available to journalists, other media and citizens about new scientific developments, as well as about scientific topics that attract media attention, and promotes information based on evidence.

Centre for AI (C4AI)

To intensify its activities in the field of artificial intelligence (AI), STOA has launched its Centre for AI (C4AI). C4AI was established by decision of the STOA Panel on 19 December 2019 and was announced at the high-level STOA workshop The Future of Artificial Intelligence for Europe, which took place on 29 January 2020 at the European Parliament in Brussels.

Within the context of STOA and based on decisions of the STOA Panel, C4AI produces studies, organises public events and acts as a platform for dialogue and information exchange on AI-relevant topics within the Parliament and beyond. In particular, it provides expertise on the possibilities and limitations of AI and its implications from an ethical, legal, economic and societal perspective. Through these activities, C4AI aims to contribute to the quality and coherence of discussion and policy-making as the EU seeks to coordinate its efforts and influence global AI standard-setting.
## 5.2. STOA Panel members

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<td>Rosa D’AMATO (Greens/EFA, IT)</td>
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<td>Christian EHLER (EPP, DE) STOA Chair STOA Bureau member</td>
<td>ITRE</td>
<td>Jakop DALUNDE (Greens/EFA, SE)</td>
<td>TRAN</td>
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<td>Ivo HRISTOV (S&amp;D, BG) 1st STOA Vice-Chair - STOA Bureau member</td>
<td>ITRE</td>
<td>Pietro FIOCCHI (ECR, IT)</td>
<td>ENVI</td>
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<tr>
<td>Ivars IJABS (Renew Europe, LV) 2nd STOA Vice-Chair - STOA Bureau member</td>
<td>ITRE</td>
<td>Emmanouil FRAGKOS (ECR, EL)</td>
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<td>Atidzhe ALIEVA-VELI (Renew Europe, BG)</td>
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<td>Lina GALVEZ MUÑOZ (S&amp;D, ES)</td>
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<td>Martin HLAVÁČEK (Renew Europe, CZ)</td>
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<td>Susana SOLÍS PÉREZ (Renew Europe, ES)</td>
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<td>Jordi SOLÉ (Greens/EFA, ES)</td>
<td>ITRE</td>
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**Committee Abbreviations:**
- **AGRI:** Agriculture and Rural Development
- **CULT:** Culture and Education
- **EMPL:** Employment and Social Affairs
- **ENVI:** Environment, Public Health and Food Safety
- **IMCO:** Internal Market and Consumer Protection
- **INTA:** International Trade
- **ITRE:** Industry, Research and Energy
- **JURI:** Legal Affairs
- **LIBE:** Civil Liberties, Justice and Home Affairs
- **REGI:** Regional Development
- **TRAN:** Transport and Tourism
5.3. STOA administration

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