



# JRC Conference and Workshop Report

## AI Watch

## Artificial Intelligence for the public sector

*Report of the "2<sup>nd</sup> Peer Learning Workshop on the use and impact of AI in public services", 29 September 2020*



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## Foreword

This report is published in the context of AI Watch, the European Commission knowledge service to monitor the development, uptake and impact of Artificial Intelligence (AI) for Europe, launched in December 2018.

AI has become an area of strategic importance with potential to be a key driver of economic development. AI also has a wide range of potential social implications. As part of its Digital Single Market Strategy, the European Commission put forward in April 2018 a European strategy on AI in its Communication "Artificial Intelligence for Europe" COM(2018)237. The aims of the European AI strategy announced in the communication are:

- To boost the EU's technological and industrial capacity and AI uptake across the economy, both by the private and public sectors
- To prepare for socio-economic changes brought about by AI
- To ensure an appropriate ethical and legal framework.

Subsequently, in December 2018, the European Commission and the Member States published a "Coordinated Plan on Artificial Intelligence", COM(2018)795, on the development of AI in the EU. The Coordinated Plan mentions the role of AI Watch to monitor its implementation.

AI Watch monitors European Union's industrial, technological and research capacity in AI; AI-related policy initiatives in the Member States; uptake and technical developments of AI; and AI impact. AI Watch has a European focus within the global landscape. In the context of AI Watch, the Commission works in coordination with Member States. AI Watch results and analyses are published on the AI Watch Portal ([https://ec.europa.eu/knowledge4policy/ai-watch\\_en](https://ec.europa.eu/knowledge4policy/ai-watch_en)).

From AI Watch in-depth analyses, we will be able to understand better European Union's areas of strength and areas where investment is needed. AI Watch will provide an independent assessment of the impacts and benefits of AI on growth, jobs, education, and society.

AI Watch is developed by the Joint Research Centre (JRC) of the European Commission in collaboration with the Directorate-General for Communications Networks, Content and Technology (DG CNECT).

This report addresses the following objectives of AI Watch: *To provide an overview and analysis of the use and impact of AI in public services.*

As part of this objective, this report presents a summary of the proceedings of the 2<sup>nd</sup> AI WATCH Peer Learning Workshop on AI use and impact in public services, which took place virtually on the 29<sup>th</sup> of September 2020.

## **Acknowledgements**

This report has been prepared by the JRC in collaboration with some of the external experts that contributed to facilitate the workshop. However, the main actors in the workshop process were the participants, and thus we would like to thank all the almost 60 participants, including representatives of Government from about 20 Member States and colleagues of various Commission's Services and experts from academia, research centres Non-Governmental Organisations and industry who actively engaged in discussions and provided input in the working group session, enriching the findings under validation and giving guidance on the way forward. We gratefully thank the representatives from the Member States who prepared a presentation about the use of AI in their government as part of the workshop.

A special thanks also goes to colleagues of DG CNECT and DIGIT who chaired and moderated panel sessions and roundtables, as well as the keynote speakers invited to ignite the debate with their knowledge.

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## 1 Executive Summary

The 2<sup>nd</sup> AI WATCH Peer Learning Workshop on ‘AI in a pandemic society’ organized by the JRC jointly with DG CNECT was conceived with a threefold objective:

1. To discuss the impact of the COVID-19 crisis on the development and uptake of AI in public services, and how AI used in government may contribute to tackling the impact of the pandemic;
2. To present the findings from the report “AI Watch Artificial Intelligence in public services” on the use and impact of AI in public services across the EU, which includes the landscaping findings, case studies and an analysis of the AI strategies;
3. Continuing the Peer Learning activities, where Member States could share their insights about the use of AI within public services and their results.

Following up on the 1<sup>st</sup> AI Watch Peer Learning Workshop on the use of AI in public services, the second workshop had to main goal to expand the previous knowledge sharing activities among the participants and to gain new knowledge on the endeavours undertaken by Member States with regards to the use of AI in the public sector. During the workshop the main findings of a recent JRC Science for Policy Report, published in August 2020, were presented, drawing an interesting perspective, though not exempt from caveats in terms of ethical concerns, for the future of AI adoption and use in the European public sector.

Continuing, a session of presentations was held where Member States presented some of their insights on AI in their governments and ongoing policy initiatives to stimulate and boost its uptake. A short discussion session was done after to help gather the immediate feedback of high-level representatives of EU Member States and other stakeholders engaged in AI governance and implementation in government.

This second Peer-learning Workshop concluded with a final address from European Commission representatives from DGs CNECT and JRC on the conclusion and next steps of the AI use and impact in public sector activity.

## 2 Introduction

### 2.1 AI Watch for the public sector – Policy context and background

Overall, the ambition is for Europe to become the world-leading region for developing and deploying cutting-edge, ethical and secure AI, as well as to promote a human-centric approach in the global context.

Building on the declaration of cooperation on AI adopted by all EU Member States, Norway and Switzerland on 10 April 2018 the Communication “Artificial Intelligence for Europe” of 25 April 2018 proposed a European strategy in support of this goal. However, only if Member States and the Commission work together, will Europe be able to turn vision into reality. Therefore, in its strategy on AI for Europe, endorsed by the European Council in June 2018, the Commission proposed to work with Member States to jointly design the Coordinated Plan on the Development and Use of Artificial Intelligence Made in Europe. This plan proposes joint actions for closer and more efficient cooperation between Member States, Norway, Switzerland and the Commission in four key areas: increasing investment, making more data available, fostering talent and ensuring trust.

The coordinated plan provides a strategic framework for national AI strategies and encourages all Member States to develop their national AI strategy, building on the work done at the European level. Strategies are expected to outline investment levels and implementation measures, while recognising common indicators to monitor AI uptake and development, as well as the success rate of the strategies in place. This will also be ensured with the support of the AI WATCH that is a joint initiative of the European Commission’s Joint Research Centre and DG CNECT.

Within this context, as the use of AI in Public Sector is flourishing across Europe and along trajectories that range from incremental to disruptive innovation and from organisational to technical and sometimes radical innovation, AI WATCH is devoting a specific focus of analysis on AI for the public sector and in public services.

AI in fact can contribute to achieve better public services in a variety of ways, for example by enabling smarter analytical capabilities and better understanding of real-time processes and delivering shorter and richer feedback loops for all levels of governance. AI is assumed to have the potential to increase the quality and consistency of services delivered, to improve the design and implementation of policy measures, to allow more efficient and targeted interventions, to enhance the efficiency and effectiveness of public procurement, to strengthen security, to improve health and employment services and to facilitate the interaction with wider audiences.

The main goal of AI WATCH task on AI for the public sector is to gather information on all EU Member States' initiatives on the use and impact of AI in public services and develop a methodology to identify risks and opportunities, drivers and barriers of the use of AI.

More specifically, this task aims to provide an overview of the use and added value of AI tools supporting public service delivery by looking at most relevant examples in prioritized public services. Based on the results of the analysis the task will draw up recommendations on the way forward for further development of AI based systems and solutions in government.

In doing so it will propose a basic framework for the use of AI in public services, defining guidelines and a generic implementation roadmap, based on best practices and the results of the analysis of the re-use potential of AI based systems and solutions, identifying also opportunities for collaboration among relevant stakeholders from various sectors.

### **3 Plenary discussions – Shaping the policy debate around AI governance**

#### **3.1 Opening remarks by the Chair**

##### **Carlos Torrecilla Salinas, Head of the Digital Economy Unit, JRC/B6 – European Commission**

The workshop was opened by the new Head of the JRC Digital Economy Unit B6, Carlos Torrecilla Salinas. In his opening remarks, he noted the virtual nature of the workshop – just another example of adapting to the new realities of life and work in a pandemic society. Aptly so, as Unit B6 has a mandate to analyse the impact of digital transformation on the European society and economy. Within it, the importance of a strong public sector, ready for the digital era has become even more crucial.

As a result, Unit B6 has been working on creating tool to track and guide the digital transformation of Europe. Amongst them is the AI Watch – a joint initiative of JRC and DG CNECT tasked with analysing the impact of AI in the public sector. This would also be addressed by the workshop: how AI can help the digitalization of public services to make them not only modern but also of high quality.

#### **3.2 Welcome and introduction**

##### **Dietmar Gattwinkel, Seconded National Expert, CNECT/H4 - European Commission**

After the Chair's introductory remarks, the participants were welcomed by Dietmar Gattwinkel, Seconded National expert from DG CNECT, European Commission. He highlighted how the last months have shown how urgent the digitalization of the public sector is. During the first peer-learning workshop organized in February 2020, nobody would have been able to predict how the following months would have turned out. Citizens and businesses have had to connect digitally to public services.

However, the pandemic also showed how public administrations were not ready for the large-scale digital transformation that followed in the latest months. Those countries which have already digitalized their services before was lucky, as they could continue most of their service operations. Unfortunately, many administrations in the Member States were not and had to do great efforts to upgrade in a short amount of time.

With regards to AI, Mr. Gattwinkel observed that the amount of Chatbots multiplied in only a few weeks, but at the same time, it became clear that the basics of digital maturity need to be there before any AI can work well. Otherwise, he continued, the AI will be a nice pilot but not be truly effective.

#### **3.3 Public Services & AI - challenges and opportunities for policy and decision-making**

##### **Natalia Aristimuno Perez, Head of Interoperability Unit, DIGIT/D2 – European Commission**

Commenting on the findings of the JRC report on AI in public services, Natalia Aristimuno Perez, Head of Interoperability Unit, DIGIT/D2 EC noted that AI could radically improve the operations of the government if used in a responsible way. As she witnessed at other recent conferences, there are more discussions about innovating public services with AI. If done well, there are many opportunities for making public services more responsive,

personalized and closer to citizens, reducing fraud and misuse of public funds, creating opportunities for proactive service delivery and making more fact-based decisions.

Developments in algorithms, the availability of huge amounts of data and more computing power allow society to make good use of AI. However, at this moment, public administrations are using AI, but in an ad-hoc way, not really embedded into the design of public services.

Continuing, she highlighted some actions that could be taken to assist in the adoption of AI in governments. One action would be to follow the principles defined under the European Interoperability Framework (EIF), such as ensuring reusability, technological neutrality, security & privacy, and openness. Each of the layers of the interoperability framework (technological, semantic, organisational, and legal) are equally relevant for AI and instrumental in the successful adoption and use of AI in public services. Therefore, she advised, to think of the data in AI projects, but also think of how the data used could be shared with other administrations as well.

A further pressing concern, is finding the right balance in regulating the use of AI to be ethical. While there are opportunities of personalized public services, there are also concerns regarding surveillance, job losses and bias in automated decision-making. Ongoing initiatives of the Digital Europe Programme, such as the GovTech Incubators, aim to ensure that all stakeholders are working together in a safe environment to provide a solution that is fit for purpose and accepted by all in order to increase trust in these challenging times.

### 3.4 Early insights and emerging issues from AI use during and after the COVID-19 crisis

#### Max Craglia, Senior Expert, Digital Economy Unit, JRC/B6 – European Commission

In this session, Max Craglia from the JRC Digital Economy Unit presented the recent report published on how the ongoing COVID-19 crisis is shaping technological and policy developments, affecting the future development of AI and other forms of digital transformation. The report follows earlier work on AI conducted by the JRC, which aims to apply multi-disciplinary perspectives on understanding opportunities and challenges of AI.

In one respect, AI is seen as a booster. There has been more and more AI adoption and use in scientific and medical research. Robots are more and more being accepted in the workplace to enter or clean places not suitable for humans. In addition, there is more data sharing practices and switch to online work practices across all the EU.

At the same time, he warned, the COVID-19 crisis has acted as an amplifier of concerns. With everyone going online, more personal data are collected about citizens and there is also a huge dependency on non-European collaborative platforms.

The potential misuse of personal data has increased significantly – some countries have exploited the COVID crisis to enact more illiberal policies and online misinformation campaigns using AI and bots have been undermining the trust of citizens. AI is therefore a “dual-face” technology.

A main observation coming from the lockdowns caused by COVID-19 is that it has widened the gap between wealthier and more vulnerable segments in the society. However, there are many available policy instruments at the European level which may help us to towards a more just and socially inclusive digital society in the future.



## 4 Session 2: AI in public services: a journey through an uncharted territory

Chair: Paul Desruelle, AI Watch Project Leader, Digital Economy Unit, JRC/B6 – European Commission

### 4.1 Overview of AI use and impact in public services in the EU: presentation of key results of a JRC Science for Policy Report

Gianluca Misuraca, author of the Report

In this session of the workshop, the recently published report “[AI Watch – AI in public services](#)” was presented. As highlighted in the introduction of the presentation, Artificial Intelligence is of high importance on the European policy agenda. However, there is overall a strong hype associated to the benefits and abilities of AI. While taking a closer look at existing publications on the topic of AI use in the public sector, it is clear that the application is far from straightforward and is linked with many different dilemmas and challenges.

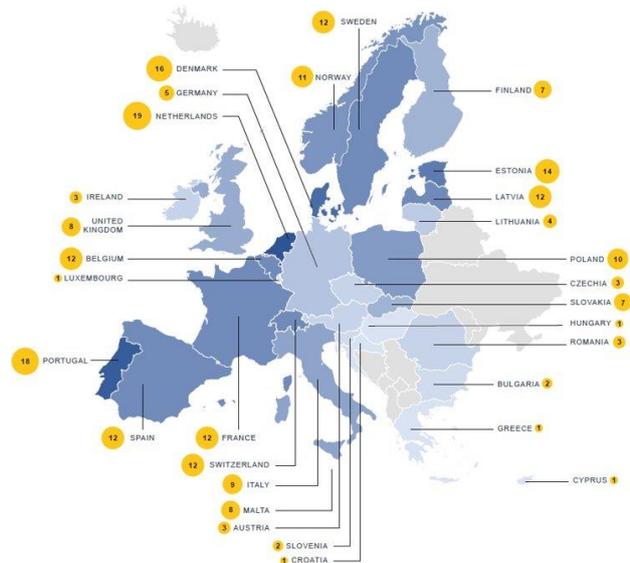
By being part of the overall AI Watch Knowledge Service, the aim of this task is to assess the use and impact of AI in public services through a variety of research actions, including a literature review, creating an ongoing inventory of AI use in public services, conducting in-depth case studies, analysing AI strategies of Member States and developing a proposal for a methodology to research the impact of AI. All these activities take place with Peer Learning activities with main stakeholders, by workshops, surveys and other.

In this respect, the research approach taken so far focuses on the adoption and use of AI applications in the public sector, with less attention given to the design and development of such systems. In fact, the adoption and use of AI in the public sector are regarded as significantly more challenging and fundamental to gaining value of the technology.

However, what is considered “AI” is difficult, due to the multiple interpretations and understandings of the term. Therefore, an AI typology has been derived from the cases collected so far to try to understand the different types of AI currently in use in the public sector. The typology is subject to change however, as new applications get used or the technology advances further.

The result of the ongoing landscaping study has led to an inventory of 230 use cases of AI across the EU27, Switzerland, Norway and the UK. As Mr. Misuraca stressed, this inventory is far from a representative sample as the data collection methods could not be a systematic one, due to the many challenges of discovering where AI is indeed used in public administrations, the different meanings of the technology, language barriers and the time required to go from a Proof-of-Concept to actual implementations of AI. However, from the inventory so far, several insights were shared:

- Most of the AI use in the sample take from in General Public Services, Health or in Economic Affairs policy sectors
- Most AI cases are found in national administrations, with only a third at the local or city level. It is however likely that there are many more initiatives taking place at local administration level.
- Most AI currently in use are Chatbots, Predictive Analytics, Computer Vision or Expert Rules-based systems, showing the prevalence of Chatbots in the public sector domain.

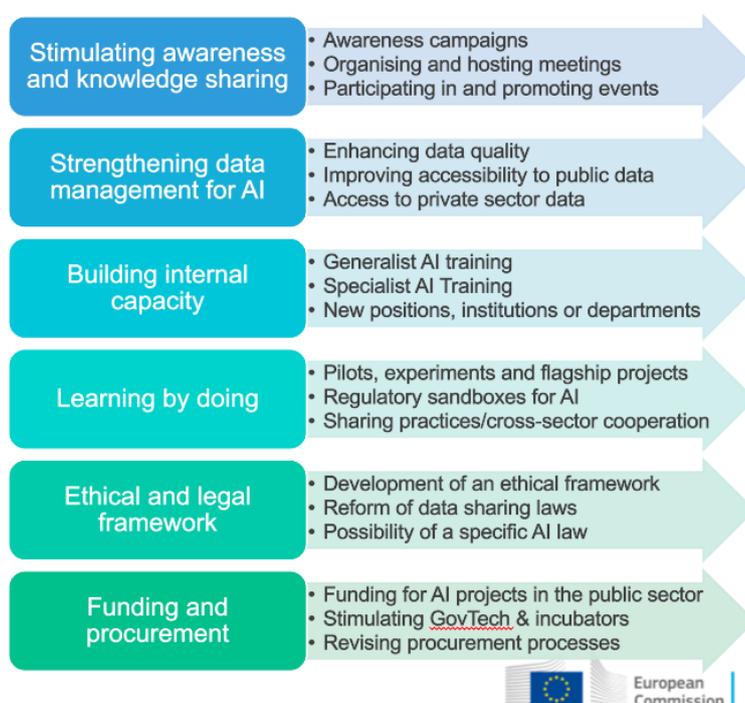


- Most AI applications aim to support public service provision or engagement, followed by enforcement purposes, internal management and regulatory research and monitoring. Only a handful cases in the inventory had the purpose to grant formal benefits or rights to citizens.

However, despite the transformative effect often associated with AI technologies, he noticed that in most cases, the changes brought by AI are mostly incremental, with not many significant organisational reforms or changes in work practices. It remains challenging to move from the data analysis to AI adoption by the end-users. This difficulty is accompanied by the fact that it remains often unclear what happens with the scaling up of pilot AI projects.

The inventory of AI use cases was also analysed from the perspective of their main value drivers. It was found that most of the AI applications aimed to increase the performance of public services and government operations. Values related to Openness or Inclusion were found much less frequent.

Next to understanding the use of AI, the report also aimed to unravel some of the policy actions Member States are taking in order to stimulate the development and use of AI. Combining results from both the survey undertaken in January 2020, an additional policy document analysis was done on the AI Strategies. This revealed a number of mentioned policy actions:



However, the current analysis shows that between different EU countries, there are differences in the depth and scope of policy actions taken and it remains unclear whether these actions in fact do contribute to furthering AI adoption. Many of the initiatives highlighted aim to stimulate or facilitate adoption, but often dedicated funding or legal reforms are less often mentioned which could lead to unsuccessful results.

With regards to the work towards the impact methodology, some theoretical orientations were shared. While the work on the methodology is still ongoing, it was noted that the approach should adopt a public value perspective and focus on the adoption and effective implementation of AI.

There are many barriers which may prevent AI exploitation which should not be ignored in such an impact framework – while at the same time unintentional and unexpected side effects should be considered. In this respect, the methodology is best deployed in analysing ex-ante and ex-post the setting in which the AI was deployed to understand the changes introduced by the AI system.

Concluding, Mr. Misuraca noticed that there are still many open issues with regards to AI adoption in the public sector, such as the high level of different AI use cases and unclarity in the public value that these solutions bring. Best practices of AI use and adoption are still lacking, while there is a strong need to learn from success stories and scale successful solutions in multiple administrations. The public sector plays a critical role in this

respect, as it has both a role in governing the technology (governance of AI) but also needs to explore how to govern with new AI technologies in a responsible way (governance with AI).

## 4.2 Use cases and trends of AI in public services in Europe: some preliminary analyses

### Colin van Noordt and Anys Boukli, AI Watch Experts & Gabriela Bodea, TNO Netherlands

Following up from the previous presentation, Colin van Noordt shared some of the use cases described in the report. As highlighted by him, these cases show the variety of challenges, but also potential of AI in the public sector. In this respect, each of the cases could be a study report on its own, but at this phase of the research, not all information is available and there are still many open questions.

#	Initiative	AI Typology	Country	Administrative level	Purpose(*)	Policy sector (COFOG)	Key enablers	Expected impact
1	SATIKAS	Computer Vision and Identity Recognition	Estonia	Central	Enforcement	Economic Affairs	Satellite data, resource/data sharing, funding, trust	Improved administration and resource use, improved subsidy compliance
2	Predictive system	Predictive Analytics, Simulation and Data Visualisation	Belgium	Central	Enforcement	Health	Sharing of data/resources, high data quality, convincing staff of value	Improved inspection capabilities, improved welfare of children
3	Automated public services	Cognitive Robotics, Process Automation and Connected and Automated Vehicles	Sweden	Local	Adjudication	Social Protection	Developed online services, political leadership	Reduced waiting time, increased efficiency, improved citizens' experience
4	Chatbot UNA	Chatbots, Intelligent Digital Assistants, Virtual Agents and Recommendation Systems	Latvia	Central	Public services and engagement	Economic Affairs	Data on FAQ, external consultancy providing expertise	Reduced administrative burden and workload, improved public service, improved citizens' experience
5	Tengai	Predictive Analytics, Simulation and Data Visualisation	Sweden	Local	Internal Management	General Public Services	Consultancy assistance, Existing recruitment practices, culture for innovation	Unbiased recruitment services, higher quality personnel, lower recruitment costs and length
6	SyRi (Systeem Risico Indicatie)	Predictive Analytics, Simulation and Data Visualisation	Netherlands	Central/Local	Enforcement	Social Welfare	Sharing of data/resources, high data quality, political leadership	Improved inspection capabilities, improved social welfare, reduced misuse of public funds
7	Unemployed profiling	Expert and Rule-based Systems, Algorithmic Decision Making	Poland	Central / Municipal	Adjudication	Economic Affairs	Political leadership, Available data on unemployment, drive for modernization	Personalized public services, reduced unemployment, improved efficiency
8	VenPol	Natural Language Processing, Text Mining and Speech Analytics	Spain	Central	Enforcement	Public Order and Safety	Collaboration with university, corpus of digital reports, integration into existing information system	Higher detection of false reports, higher productivity, reduced submission of fraudulent reports

The first case described is the SATIKAS system used in the Estonian Agricultural Registers and Information board (ARIB). This system analyses satellite data together with other historical inspection logs to detect the mowing of grasslands by farmers. One of the takeaways from this case is the importance of collaboration and the sharing of resources, both financial, human, data, infrastructure and more, among different organizations to ensure successful adoption.

The second case is the use of a predictive system in Belgium used in the Child & Family agency. This AI system analyses different data sources to detect day-care services which may be of need of the inspection agency in a more data-driven way. It aims to optimize the inspection capacity of the agency and ensure more targeted interventions of the scarce resources available. This case illustrated that civil servants need to ensure an AI-system is an enhancement to their expertise, and not a replacement. If not, resistance is great and can lead to a lack of adoption.

The third example given was that of an AI system using robotic process automation (RPA) in the municipality of Trelleborg. This allowed the municipality to automate various applications for homecare, sickness benefits and taxation, reducing costs and waiting time for citizens. However, the case also shows limits to automation due to organisational resistance and many paper-based processes part of the organisation.

Moving onwards, a Chatbot in Latvia was presented. This Chatbot was introduced to answer frequently answered questions about business registration and ongoing applications, relieving staff of these tasks. However, it was clear that Chatbots run the risk of existing eGovernment challenges such as a lack of transactions and lack of integrated knowledge basis, so citizens may not be able to get all relevant information in one place.

In another municipality in Sweden, an actual robot is being used in recruitment processes to make the processes less biased. Some parts of the recruitment process are done by the robot, such as interviewing, while the final decision is made by humans. It shows the importance of human-robot collaboration, ensuring that AI complements the strengths and weaknesses of people and vice-versa.

However, there are also cases of AI which were regarded much more controversial. As explained by Mr. Van Noordt, adoption is not a guarantee as in the long term, systems can be (legally) challenged. One such system

is Syri, used in the Netherlands. The system, designed to assist municipalities in detecting misuse of public funds, was regarded as highly controversial and following a court case, found to be non-compliant with Article 8 of the ECHR (the right of privacy). Indeed, the balance between economic interests of the state in combating fraud must be balanced with the social interests of privacy – which is a balance still to be found.

On a similar note, a system which was used in Poland's Labour Offices also was judged unconstitutional and dismantled by the government. While intended to be a system to assist civil servants classify unemployed people in categories, highlighting predicted levels of support and resource burdens, it received many formal complaints. One of these complaints was that, while intended to have civil servants make the final decision, it was found that 99% of the recommendations of the system were followed, highlighting the need for staff to be empowered to question AI's decisions.

Lastly, an AI system used in the Spanish police to detect false police reports was presented. As the filing of false police reports takes away precious time and resources from police agencies, a system was developed to help detect them. Following successful pilots, the system was diffused throughout the Spanish police, highlighting the importance of scaling up successful AI pilots.

The next speaker, Anys Boukli shared some of the ongoing trend analysis into AI usage. He highlighted the study approach to gathering case studies, finding relevant selection criteria for more in-depth case studies. In the following months, more in-depth case studies will be conducted following this approach.

With regards to the current inventory, he showed new regional assessments of AI use. Most of the collected cases from the Northern European countries with 87 cases, of which most of them in General Public services.

While Chatbots are the most representative AI system up to date, there are many different applications of this technology such as finding general information, contact information, document searches, finding road conditions, emergency contacts and many more. Similarly, the second most often identified AI application, that of Predictive Analytics, Stimulation and Data visualizations, have many different uses, such as making policy simulations, early-warning systems, fraud detections and many more.

## 5 Session 3: Taking stock of AI Watch for the public sector and next steps

Chair: Francesco Pignatelli, Programme Manager, Digital Economy Unit, JRC/B6 – European Commission

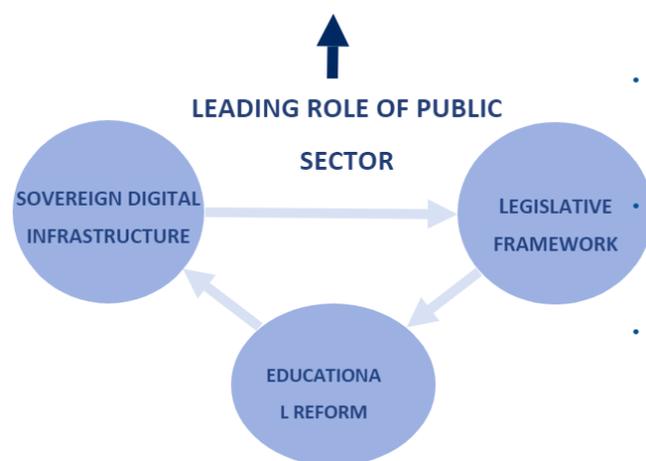
### 5.1 Panel discussion: insights from MS experiences on AI governance and COVID-19-related AI use cases

The following section describes a number of presentations from Member States representatives.

#### Jana Novohradská – Ministry of Investments, Regional Development and Informatization, the Slovak Republic

In the AI era, the public sector is faced with a number of crucial challenges. In this respect, the public sector needs to take on a leading role in a few topics. Among those, are a sovereign digital infrastructure, a fit for purpose legislative framework and an educational reform.

As part of the initiatives of stimulating the Slovakian AI ecosystem, a manual has been delivered on how to ethically deploy Artificial Intelligence amongst the SMEs and start-ups. The public sector of Slovakia takes a leading role in this respect. Connected to this, there is an ongoing work to set up an ethical committee for AI which should be finalised by the end of 2020.



According to the most recent EC data, Slovakia is doing very well in terms of investment per GDP into companies innovating and developing AI technology and using AI tools.

With respect to the use of AI in the public sector, she continued, that due to insufficient data, it is difficult to determine the ROI and measure the beneficial value for our citizens. The preferred modus operandi of public sector across the EU, is to pilot small scale AI proof of concepts, or solutions, which are not hooked up to the central databases and or fully integrated into the existing e-government platforms, even in countries, in which the digitalisation of public sector is above the EU average.

The isolated nature of many of these projects exposes the risk of not having any integrated knowledge base and learning from different experiences. Perhaps more fundamental is that with a lack of transparency and legislative frameworks is that the application of AI technologies can be legally challenged – running the risk that systems must be dismantled. The solution of black boxing is not something that should be applied to the public sector. Explainability – whether ex-ante or ex-post – is fundamental for any technological solutions in the public sector.

Now, the first stage of AI transformation in the public sector is with Robotic Process Automation (RPA). By using this technology, the public sector aims to automate processes which are designed by humans. RPA includes a process re-engineering phase, which cannot be skipped. In essence, we are trying to automate and digitalise digitally non-native processes. This requires a process re-design.

However, as we have noticed humans know all the nuances of processes and we have discovered that civil servants are resistant to change. If you want to automate a process, you first need to know a map of the process now and how it should look like at the end. If a process is now done by a human, it will look different if done by a machine. Currently, Jana, concludes, people are unaware that the process will look different if it done by AI and nuances are lost.

The most recent trend in RPA within private sector was instead of doing an “ideal path” which is cheaper and takes less time, than a more costly mapping and re-design of a manual process to capture all exception loops

which is the only way to facilitate a full automation. This means that this approach would require multiple loops of reiterations and at the end, might become more expensive, however, the costs would be spread out.

### **Nathanaël Ackerman – Federal Public Service, Policy and Support, AI4Belgium, Belgium:**

Now, there are multiple AI strategies in Belgium due to the federated nature of Belgium's government structure. Both Wallonia and Flanders have their own regional strategy and there are many different initiatives within the Brussels Capital Region with regards to AI. At the Federal Level, there is the AI4Belgium strategy. The Federal strategy is built on 5 different axes, of which one of them is to improve public services with AI and to boost the AI ecosystem.

This strategy is the result of AI4Belgium, a community-led approach which brings together experts (700-800) of AI in Belgium. Within this community, there are different multidisciplinary workgroups, with AI4GOV to come soon along with some others. The goal is to share experience between stakeholders, to connect this to the EU Ecosystem and funding schemes and to help demystify AI and organise trainings.

Within the Belgium public sector, there has been several first experiments. In 2018, a Chatbot has been developed to handle complaints from citizens. The bot aimed at supporting a specific hotline managing some 60K+ complaints from citizens. By learning from previous complaints, the bot dispatched questions immediately to the right administration. Another Chatbot has been developed to manage specific requests of Human Resources related to civil servants. The bot is being trained based on previous input of 20K+ demands (mails, calls, contact forms). In the future, it is likely that an orchestrating bot will be developed to dispatch HR related request to the right specialists in government HR. In social security domain, AI is used to combat social fraud.

In the Federal Public Service Finance, there is an AI application which aims to identify implications and changes induced by new legislation or legislative amendments on other legislation or administrative documents. Another project within this department is the exploiting of data contained in case law. This AI application tries to predict the meaning of a future decision based on the arguments used in previous decisions. It is expected that this tool will be a good support to the litigation departments and increases legal security.

Another activity, which is planned to stimulate AI applications in the public sector, is an Hackathon in January 2021. This hackathon is open to civil servants at the federal and regional levels. The teams will be composed of civil servants, private sector, and academia.

With regards to using AI to fight COVID-19, Mr. Ackerman shared that in Belgium a variety of different algorithms and AI software has been developed, ranging from forecasting, screening of patients and translation about official COVID-19 measures from Dutch or French to immigrant languages.

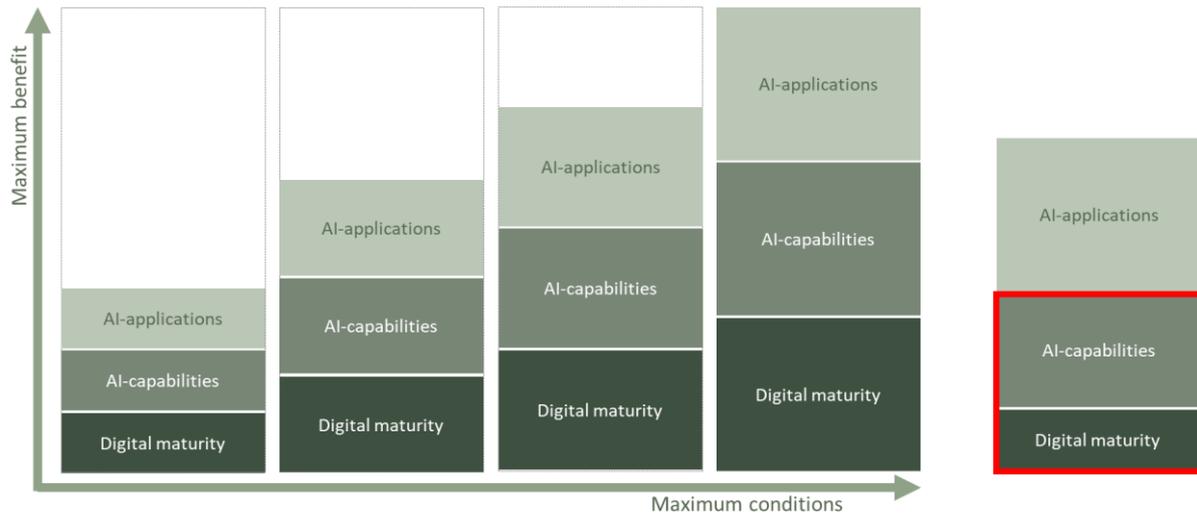
In this respect, AI can support policy makers in the fight against pandemics and doctors by efficient screening of patients and in the development of medicines. However, it was also clear that there were many difficulties in collecting trustworthy data or sharing these data. There was a lack of an appropriate infrastructure within the Belgium hospitals, a lack of interoperable protocols and a lack of coordination at the EU level where it was needed.

### **Patrick Eckemo - Agency for Digital Government, Sweden**

In Sweden, a government assignment was completed a couple of months ago. The aim of this initiative was to promote the use of AI within the public administration. One part of this was to better understand the potential value of AI fully used in the public administration in Sweden. The potential value was estimated to 14 billion euros annually which corresponds to 6% of the total costs of the public administration. In this project, over 400 existing use cases globally were analysed and 100 could be applied to the Swedish administration.

From these findings, it was noticed that there is a lot of potential of using AI in planning and production tasks. As Mr. Eckemo underlines, this is a significant sum of money, showing that much more public investments should be done to ensure that all the opportunities of AI are captured.

One of the key insights was the correlation between high digital maturity and the success of using AI. A high digital maturity is a prerequisite to be able to create the right conditions for AI to be able maximize the AI utilization. In order to develop and use AI in a safe, ethical and secure manner you need to start establishing the right AI conditions, e.g. common frameworks, ethical guidelines and common AI platforms etc.



By assessing the current the Swedish situation, it is noticed that there is already a high level of digital maturity, but there is a lack of common AI capabilities within Sweden at all levels especially in the public sector. Consequently, he shares that currently the right conditions, the AI readiness, are not yet in place to implement AI in the right and safe way even if the digital maturity is relatively high. At the same time there is a huge demand in the public administration and several AI projects are starting or ongoing regardless of the AI readiness.

The AI readiness is the sum of the digital maturity and the AI capabilities. Increasing digital maturity is primarily a task for the individual public institutions as part of their digital business development. But the AI capabilities needs to be managed at all levels by different stakeholders, some at the national level. A small municipality do not have the resources to establish their full stack, so something central must be arranged in this respect.

At the same time the larger agencies will have more AI capabilities in-house than others. In fact, there is an ongoing project where 100 municipalities are planning for AI development, but now the right AI capabilities are not available yet, so it is unclear how that develops. It is up to everyone to ensure their own AI development.

Currently, there are several policy suggestions given to increase the AI abilities in Sweden:

- Clearer governance and management
- Appropriate legal development
- Increased conditions for skills supply
- Shared competence & delivery support
- Common digital infrastructure
- Data as a strategic asset
- Ecosystem for collaboration & innovation

Now, there are ongoing discussions on establishing a National AI centre which will be connected to European Digital Innovation hubs. Similarly, there are discussions whether to establish a systemic AI Watch but for the local, Swedish context.

Another project which was shared during the presentation was an ongoing government assignment which aims to record decisions taken by an AI system and place them on a blockchain to work towards more trustworthy AI in the public sector.

In addition, there is a major stakeholder collaboration initiative ongoing part of the AI Agenda for Sweden. It looks like the AI4Belgium initiative shared by the previous presenter.

## **Paul-Antoine Chevalier - AI Lab, Etalab, France**

The French Artificial Intelligence Lab is a unit part of the French Inter-ministerial Digital Department (DINUM). This unit is a small team with 5-6 people, which are tasked with helping departments and agencies with develop and use AI for their needs, to build shared capacities for the development of a French AI and to train the ecosystem of public actors in AI.

Recently, Mr. Chevalier explains, there has been a launch of different AI projects in different ministerial departments. In 2019, the first call of AI projects was held of which 6 projects were selected as a way to boost artificial intelligence uptake in the public sector. These projects received 12 months of support in partnership with the department of public transformation (DITP). Of these 6 projects, 5 have been pilot tested and are implemented today. To share experiences of these projects, online experience-sharing sessions are organised.

In 2020, there has been a second wave of AI projects launched. This year, there are 15 projects covering several areas of public action such as justice, security, economy, health, and ecology. It is expected that the projects will be completed between November 2020 and February 2021.

An example of one of the AI projects is the optimization of restaurant controls based on a combination of historical inspection data and comments and opinions from consumers on web platforms. This has resulted that 18% of the controls carried out by the head inspectors lead to an assessment that the establishment was not complying with the hygiene rules.

Continuing, he described projects assisting in the creation of shared AI capacities within the French government. One of them is PIAF, which should become a French question-answering engine, planned to be used in service of the website public.fr. The goal of this engine is to create an open training dataset for French speaking questions. This was done by organisation weekly annotation events to build a large dataset with 9000 questions and 9000 answers. Such a database is regarded sufficient to create an algorithm.

As one of the final core tasks, is to further stimulate the networks of AI experts and AI project leaders from all the ministries. Therefore, there are monthly meetings to discuss and share good practices using AI in the public sector as well as newsletter containing the latest information on AI projects in the public sector.

## **5.2 Open discussion with the participants:**

After their individual presentations, an open discussion format was held and facilitated by Marina Manzoni and Igor Calzada from the Digital Economy Unit, JRC/B6 and Dietmar Gattwinkel, from the eGovernment and Trust Unit, CNECT/H4 – European Commission

Firstly, Member States were asked how they expect that Artificial Intelligence could mitigate the COVID-19 aftermath. From the discussion it emerged that tackling corona through digital frontier technologies – whether they involve AI or not – was regarded as challenging. As one participant highlighted, is that tackling corona with technology runs into various dilemmas, such as the decision whether to use a centralized or decentralized approach of data storage, ownership, and sharing. Furthermore, there are very limited technological options to explore which are not dependent on non-European providers. Data ecosystems at the European level thus remain crucial and may be explored as a joint and future collaborations among DG JRC and DG CNECT onwards.

As a conclusion of this workshop it could be argued that AI may well follow lessons learned from the H2020-Smart Cities and Communities policy framework programme, where European cities collaboratively may now be spoken with its own voice by blending data governance, smart cities, and AI research and policy cutting-edge formulations (Calzada & Almirall, 2020)<sup>1</sup>. Hence, emerging insights into the potential AI case studies and experiments on data ecosystems, consisting of city and regional data infrastructures and institutions operating in Europe are becoming increasingly substantial for Europe to achieve a global leading role in the digital era by putting citizens in the core of their digital service delivery.

Another participant highlighted that there has been challenges with getting the data needed for AI, as there was no infrastructure available and transfers were made more difficult due to the personal data involved.

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<sup>1</sup> Calzada, I. & Almirall, E. (2020), [Data Ecosystems for Protecting European Citizens' Digital Rights. Transforming Government: People, Process and Policy \(TGPPP\) 14\(2\): 133-147. DOI: 10.1108/TG-03-2020-0047.](#)

Therefore, it was suggested, explorations should be done to find more flexible data infrastructures and institutions when another crisis occurs to facilitate data transfers and ownership. However, the population is not comfortable yet – even afraid – with sharing their personal data for health care purposes, which makes the establishment of these data infrastructures tricky. As a key additional information produced in the JRC, [DigiTranScope](#) project has been widely producing relevant scientific knowledge in this direction.

In this respect, from the discussion it emerged that there is room for the European Union to play a more prevalent role in the future, either through making additional resources available to tackle the closure of the internal Schengen borders, but also through developing a common digital infrastructure and institutions in Europe to make trustworthy platforms at the European level available.

With regards to the development of AI, there is room for the European Union to make resources available on a European wide level, such as linguistic databases, assisting creating semantics, catalogues and making high value datasets available for training and evaluating the impact of AI. However, without related data ecosystems across cities and regions within and among Member States, the EU might lose its opportunity to establish a pan-European post-GDPR AI strategy, worth considering at this critical stage of the AI Watch project amidst the pandemic crisis.

Asking which actions may be taken to stimulate the adoption of AI, participants highlighted the need to pay more attention to various strategic public-private partnerships and making available various framework conditions. However, more fundamentally order to stimulate AI adoption in the public sector, trust is extremely important, showing the need to ensure that the technology is used in an ethical and transparent way within the government. In addition to this, current research findings in the AI and smart cities show a prominent field to be developed even beyond PPP frameworks, a way in which AI could be well and dynamically adopted by citizens from the local level.

JRC/B6 and DG CNET/H4+H5 must foster their collaborations to deliver better and ambitious results.

### **5.3 From AI White paper to the Adopt AI programme: preparatory actions and platforms for EU regions and cities**

#### **Andrea Halmos, Policy Officer, Smart Mobility & Living Unit, DG CNECT/H5 - EC**

In her presentation, Ms. Halmos stressed the importance of the local level in the digital transformation through AI. In fact, many initiatives at the local level are happening within local communities and smart cities. Both the eGovernment community and cities themselves indicated an interested to experiment with AI technologies.

This has also been accompanied by a variety of policy documents, such as the Digital Transition Partnership under the Urban Agenda of the EU, AI for Europe, the Coordinated Plan on AI and the White Paper on AI. Cities play a significant role in boosting their local innovation ecosystems.

There are activities to support ethical and socially responsible use of data by local governments to improve the quality of life and digital rights. Initiatives such as Living-in.EU and Cities for Digital rights facilitate the European way of digital transformation in cities and communities.

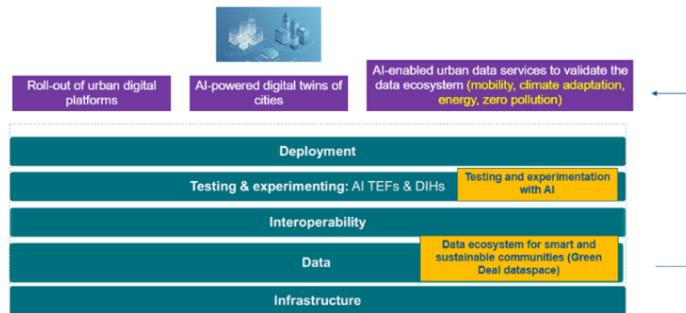
Indeed, several of the use cases identified from the AI Watch report take place at the local level. There is a lot of potential for cities to experiment with AI as they often serve as innovation hubs. So, if public administrations want to be more efficient and effective, AI may be a useful tool. AI may also enable more personalised services, e.g. based on geographical and temporal data. AI based solutions could also assist monitoring the implementation of Single Market rules.

Furthermore, in many smart cities, a lot of data is being collected through other initiatives, such as IoT, sensors, utilities, citizens and more. This all could feed into AI-enabled solutions and evidence-based policy making. Initiative such as Urban Digital Twins can help cities utilize all these data sources and create scenarios using real-time data.

The challenge now lies in helping guide administrations in using these technologies the 'European way', in respect of ethical principles and European values.

In this respect, a number of policy measures are being taken and considered:

- Identifying use cases
- Platform for knowledge sharing
- Supporting availability of data
- Sharing of datasets, algorithms
- Experimentation, testing, piloting
- Guidance for procurement
- Skills and capacity building



For this, platforms that facilitate knowledge sharing are highly important. A number of workshops have been organised already and regular meetings with the over 70 signatories of the Living-in.EU Declaration are also ongoing. In addition to that, there is a new project upcoming which will aim to set up a platform for regions to share experiences of AI and Big Data in Europe.

Another challenge to overcome in the digital transformation of cities is to avoid too much reliance on foreign infrastructures. The European data strategy promises to create European data spaces (with high value datasets for re-use and sectoral datasets) and to facilitate trustworthy data exchanges. In the context of cities, the intention is to create data ecosystems for climate-neutral and smart communities (under the Green Deal dataspace).

Finally, and in view of the difficulties public administrations face when procuring AI-enabled solutions, the Living-in.eu movement's technical sub-group is developing a set of procurement conditions for fair AI, under the leadership of Amsterdam. These conditions are meant as a practical implementation of the Ethics guidelines for trustworthy AI of the EU HLEG and build on the experience of the AI4Cities H2020 EU-funded project that brings together six European cities and regions to use AI solutions to accelerate carbon neutrality.

## 5.4 AI Watch for the public sector: conclusions and next steps

**Francesco Pignatelli, Digital Economy Unit, JRC/B6 - European Commission**

**Dietmar Gattwinkel, Seconded National Expert, CNECT/H4 - European Commission**

As made clear in the previous presentations, there is still very little knowledge about the use and the consequences of using AI in the public sector. There is a strong research focus of AI developments in the private sector, but the public sector is often out of scope. However, the public sector has a great role to play in the digital transformation of our societies. With regards to AI, already four different roles are identified:

- Government as a facilitator, acting as a source of funding or other support to stimulate AI development and adoption in their societies.
- Government as a regulator, establishing regulatory frameworks to minimize the potential risks of AI
- Government as a user, in which they use AI in the government to improve public services, policymaking and internal operations
- Government as a developer, where they are developing in-house AI solutions

However, the policy discourse, often highlights only the role of the government as a regulator or facilitator. The roles of user and developer of AI technologies are frequently left out or do not enjoy the same amount of interest and investments. That is, however changing, as the recent consultation held on the EU AI white paper revealed: many respondents considered the promotion of AI adoption by the public sector as very important for ensuring an 'ecosystem of excellence' within the EU.

Thus, the research activities will continue by: i) Updating the overview of the use of AI in public services, by making the inventory of use cases more robust, structured and diverse. In addition, more in-depth case studies will be held on some of these initiatives; ii) Continuing development on proposal of a methodological approach to assess the social and economic impact of AI in public services; and iii) Designing a roadmap for AI in the public services, with guidelines and an implementation roadmap

## Agenda

09:00 – 09:30	Connecting to the system, testing the connection, video and sound	
09:30 – 10:10	<b>Session 1: AI, public policy and the pandemic: opportunities and challenges</b> <b>Chair: Carlos Torrecilla Salinas, Head of the Digital Economy Unit, JRC/B6 – EC</b>	
09:30 – 09:35	Welcome & Introduction	<b>Norbert Sagstetter</b> , Head of eGovernment and Trust Unit, CNECT/H4 – European Commission
09:35 – 09:55	Public Services & AI - challenges and opportunities for policy and decision-making	<b>Natalia Aristimuno Perez</b> , Head of Interoperability Unit, DIGIT/D2 – European Commission
09:55 – 10:10	Early insights and emerging issues from AI use during and after the COVID-19 crisis	<b>Max Craglia</b> , Senior Expert, Digital Economy Unit, JRC/B6 – European Commission
10:10 – 11:00	<b>Session 2: AI in public services: a journey through an uncharted territory</b> <b>Chair: Paul Desruelle, AI Watch Project Leader, Digital Economy Unit, JRC/B6 - EC</b>	
10:10 – 10:30	Overview of AI use and impact in public services in the EU: presentation of key results of a JRC Science for Policy Report	<b>Gianluca Misuraca</b> , author of the Report
10:30 – 10:50	Use cases and trends of AI in public services in Europe: some preliminary analyses	<b>Colin van Noordt</b> and <b>Anys Boukli</b> , AI Watch Experts & <b>Gabriela Bodea</b> , TNO Netherlands
10:50 – 11:00	Q&A	
11:00 – 11:15	Short break	
11:15 – 12:30	<b>Session 3: Taking stock of AI Watch for the public sector and next steps</b> <b>Chair: Francesco Pignatelli, Programme Manager, Digital Economy Unit, JRC/B6 - EC</b>	
11:15 – 11:45	Panel discussion: insights from MS experiences on AI governance and COVID-19-related AI use cases: 1. <b>Jana Novohradská</b> - Office of the Deputy Prime Minister, Slovak Republic 2. <b>Nathanaël Ackerman</b> – Federal Public Service, Policy and Support, Belgium 3. <b>Patrick Eckemo</b> - Agency for Digital Government, Sweden 4. <b>Paul-Antoine Chevalier</b> - AI Lab, Etalab, France	Facilitated by <b>Marina Manzoni</b> and <b>Igor Calzada</b> , Digital Economy Unit, JRC/B6 and <b>Alma Joy Ridderhof</b> , eGovernment and Trust Unit, CNECT/H4 – European Commission
11:45 – 12:00	Q&A & open floor	
12:00 – 12:15	From the AI White paper to the Adopt AI programme: preparatory actions and platforms for EU regions and cities	<b>Andrea Halmos</b> , Policy Officer, Smart Mobility & Living Unit, DG CNECT/H5, European Commission
12:15 – 12:30	AI Watch for the public sector: conclusions and next steps	<b>Francesco Pignatelli</b> , Digital Economy Unit, JRC/B6, and <b>Dietmar Gattwinkel</b> , Seconded National Expert, CNECT/H4 - European Commission
12:30	End of Online workshop	

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