Legal and technological aspects of the implementation of proposed EU law on Artificial Intelligence in the land registry systems

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Artificial Intelligence and EU – short introduction

The topic of artificial intelligence (AI) is currently one of the most discussed when it comes to setting trends and directions for countries in Europe.

European Council pointed to be *„aware that new trends require an urgent response", which includes "issues such as artificial intelligence (...) while ensuring a high level of data protection, digital rights and ethical standards”*

European Council, Extraordinary European Council (1 and 2 October 2020) - Conclusions, EUCO 13/20, 2020, p. 6

Artificial Intelligence and EU – short introduction

European Commission tabled a proposal containing a draft Regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (**Artificial Intelligence Ac**t) and amending certain legislative acts of the Union.

21 April 2021

The Digital Services Act and Digital Marketplaces Act (DSA and DMA) package, which aims to create a secure digital space in which users' fundamental rights are protected and to create a level playing field for entrepreneurs

in force since autumn 2022; https://digital-strategy.ec.europa.eu/en/policies/digital-services-act-package.

Example of Germany:
the use of Artificial Intelligence to more efficiently and quickly identify suitable plots of land for land planners (self-learning alghoritms)

- the German Fraunhofer Institute for Computer Graphics Research IGD in Rostock (state of Mecklenburg-Vorpommern) in cooperation with the Ministry of Infrastructure and Digital Transformation (MID) of Saxony-Anhalt
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- development a self-learning algorithm to more efficiently and quickly identify suitable plots of land in existing towns to use more much less virgin land for local residential development

- MID has been collecting data on parcels of land with development and information from geodata and land registry systems, combined with aerial photographs and remote sensing satellite data

- planners spent a lot of time on identification parcels of unused land within existing developments, especially virgin land that should serve future generations. Tt was decided to use Artificial Intelligence to combine geo-information, computer vision and an artificial neural network

- the self-learning algorithm is already in use and proved to be effective (identification of plots of land with development potential using semantic segmentation)

- **This project is successful:** significantly reduces the need for site visits, saving planners time and money

Example of Sweden:
the use of Artificial Intelligence for natural language processing (NLP) for land registry documentation

- the project concerned natural language processing (NLP) for the Swedish Land Registry (SLR), which needed to increase its efficiency when processing land registry requests

- staff at the Swedish Land Registry received many requests from citizens for information about properties and property rights
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- to make a decision, the employees had to review historical information about the property (dated back to the 50s). They spent about 48 000 hours a year on the manual translation and evaluation of handwritten original documents

- the handwritten documents were of poor quality, making analysis difficult. To improve this, the Swedish Land Registry carried out pre-processing of the handwritten documents using a handwritten text recognition system (HTR) to extract information from the handwritten documents

- Artificial Intelligence (neural network) was then used to apply word corrections and synonims to complete sentences with words that were not captured by the HTR system

- **This project is successful**: it greatly improved the recognition of applicants' requests and helped focus on urgent decisions, staff time was saved, value for money as well

Other examples: Netherlands and Estonia
Black chain projects related to improving the operation of land registers with the use of Artificial Intelligence

- **the Netherlands**: a project to test **blockchain technology** for national property data to improve the flexibility and efficiency of the organisation, which aimed to explore the legal, technical and governance aspects of the technology (2018)

Blockchain to be tested by Dutch land registry https://todaysconveyancer.co.uk/blockchain-tested-netherlands-land-registry/

- **Estonia**: the use of Blockchain technology is being used to ensure the reliability of Land Registry

e-Estonia, Frequently Asked Questions: Estonian blockchain technology, 2019. - https://perma.cc/56B2-PPYV

- It should be emphasised that, in terms of the application of AI in land registers, it is based on two main issues:
  - ensuring **data consistency**,
  - ensuring **data security,**

  when the data itself is made available (data openness) in favour of the solutions in the indicated examples.

A draft proposal for the adoption of the Artificial Intelligence Act of April 2021

- the *„White Paper on Artificial Intelligence- A European approach of trust for excellence*" published by the Commission on 19 February 2020

European Commission 'White Paper on Artificial Intelligence. A European approach to excellence and trust', COM(2020) 65 final, 2020

- The Paper sets out options how to achieve the dual objective of **promoting the use of Artificial Intelligence** and addressing **the risks** associated with certain applications of this new technology

Draft on Artificial Intelligence Act (AIA): definition and its specific objectives

- **Artificial intelligence (AI)** is a fast-growing group of technologies with the potential to deliver a wide variety of socio-economic benefits across all industries and areas of social activity.

- The project's extensive explanatory memorandum shows the history, reasons and specific objectives of this regulation.

- Attention should be paid **to the specific purposes**, as the construction of 85 articles of the draft is based on them. These include:

✓ ensure that AI systems placed on the Union market and used are **safe and respect existing law on fundamental rights and Union values**;
✓ ensure **legal certainty** to facilitate investment and innovation in AI;
✓ enhance **governance and effective enforcement** of existing law on fundamental rights and safety requirements applicable to AI systems;
✓ facilitate the **development of a single market for lawful**, safe and trustworthy AI applications and **prevent market fragmentation**

Draft on Artificial Intelligence Act (AIA): definition and its specific objectives

- great importance is placed **on security and the protection of rights**, compliance with the Charter of Fundamental Rights and the values of the European Union
- the establishment of the **High-Level Expert Group** on AI in 2018
- importancy of **a responsible approach by the Member States towards AI**: example of the Dutch Audit Office activity
- **the EU principles of subsidiarity and proportionality** were considered to justify the adoption of a regulation

Draft on Artificial Intelligence Act (AIA): specific issues

- the application of **a directive** would not achieve the expected results, it is too weak as legislative instrument. The draft was consulted extensively in 2020 (over 1,500 responses)

- the very developed **dictionary with definitions** (44 definitions), mostly of a technical nature, such as „artificial intelligence system", „user", „biometric data" etc.

- definition that „**user**" means any natural or legal person, **public authority, agency or other body** using an AI system under its authority, except where the AI system is used in the course of a personal non-professional activity" (Art. 3(4) of AI draft, with **the result that land registries**, whether within public administration or the judiciary systems, fall within the scope of the regulation and its standards shall apply to them

- recital 37 of the AI draft states that "*Another area in which the use of AI systems deserves special consideration is the access to and enjoyment of certain essential private and* ***public services and benefits necessary for people to fully participate in society or to improve one's standard of living****. In particular, AI systems used* ***to evaluate the credit score or creditworthiness of natural persons should be classified as high-risk AI systems****, since they determine those persons' access to financial resources or essential services such as housing, electricity, and telecommunication services*"

Draft on Artificial Intelligence Act (AIA): activity of Member States and ELRA

- One of the obligations will be to raise **public awareness of artificial intelligence** and therefore States will, among other things, organise **special information events**

- Such activities have already started few years ago, example: Ministry of Justice of Poland *„Ius silico - artificial intelligence at the service of justice”,* Warsaw, 17-18th April 2023
  https://www.si-dla-sprawiedliwosci.gov.pl/

- Proposition: a **Team on Artificial Inteligence in Land Registry** within the ELRN, serving to collect good practices in the area of land registers in the represented EU countries.

Questions:

Please reflect and answer simple questions (sent via e.mail to the CPs, answer - 18th June 2023)

1. Does your State have any national legislation regulating artificial intelligence in the public sector with a translation into land registers? If yes, which ones? If not, is it planned to draft such?
2. Is the draft EU Artificial Intelligence Act distributed to the staff of your institution? If yes, do they study it? If not, what could be done to improve situation?
3. Can you give examples of the use of AI in the institution you represent related to land registry regulation/management? What are the methods to secure data to fully realise the openess of the data?
4. If yes, what opportunities and risks are involved? If not, what possible solutions could be implemented in your opinion?

Thank you in advance for all your reflections and answers!

THANK YOU FOR YOUR ATTENTION

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