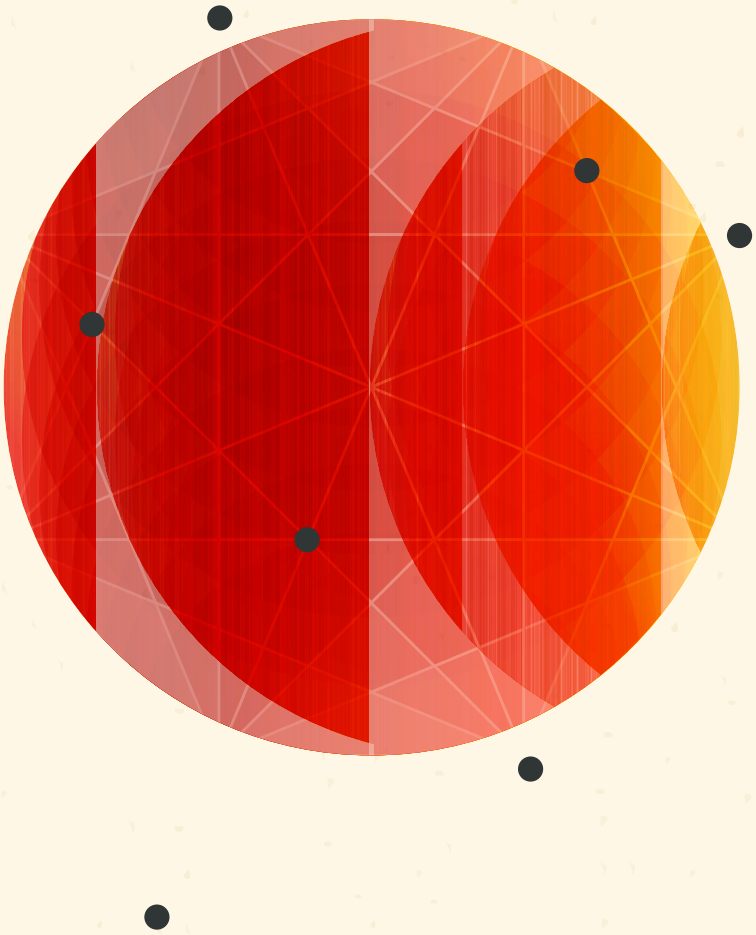

alGOVrithms

STATE of PLAY

Report on Algorithms Usage
in Government-Citizens Relations
in Czechia, Georgia, Hungary,
Poland, Serbia and Slovakia.

Fundacja ePaństwo

alGOVrithms

STATE OF PLAY

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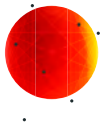

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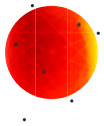
Where did they find it? Maybe they are working on some kind of Judge Dredd solution in the Ministry of Justice :)?*

*This is the quote from an internal email of one of the public officials working on the response for ePaństwo Foundation's FOI request sent to one of the Polish Ministries on the usage of automated decision making which was delivered to the Foundation by mistake.



I.1 INTRODUCTION

The future described in the 1977 comic written by British author John Future is almost here. At least in the sphere of law enforcement and other authorities – citizens relations. Thanks to our donor – Visegrad Fund, we were able to research how technology in the form of algorithms is implemented in public institutions in Czechia, Georgia, Hungary, Poland, Serbia and Slovakia. The report consists of data and analysis gathered by researchers from ePaństwo Foundation, KohoVolit.eu for Czechia and Slovakia, IDFI, K-Monitor and CRTA between November 2018 and April 2019.

The heated debate on algorithms — which are part of the governmental (but also legislative and judiciary) software and strongly influence citizens' lives — is present in Western countries, but it has not yet reached the same level in Central and Eastern Europe. Yet it does not mean that automated decision processes do not exist in the region. During the research, we have found a significant number of algorithms that may be qualified as a part of automated decision making (ADM).

We have detected automated decision making in a large number of spheres including speed control, allocation of judges and other public officials, choosing batches for conducting controls and inspections, distributing social benefits, detecting frauds or even preselection of contractors in public procurements.

None of the researched countries is close to the transparency standards of ADM. We have met with an official refusal to access source codes or its algorithmic parts based on statements that this is not public information, they are protected by copyrights or economic secrecy.

There is a general lack of understanding among authorities of what automated decision making is. The quotation from one of the emails at the beginning of the report is only an example. Some responses were limited to the statement that the particular office is using computers for their work, so surely there are some algorithms involved.

Systems are not transparent even for those who use them. This is the case of the system allocating judges to specific court cases or public officials using algorithms to recruit children into nurseries or pre-selecting bidders.

There is no clear division of responsibility for the accuracy of algorithms. Some tools are created and owned by the states, some are owned by external companies. No independent system of auditing algorithmic fairness is set in place as well as no accumulated knowledge exists within central governmental institutions if algorithms are implemented in other subordinated offices.

There are no ethical standards implemented nor impact and needs assessments performed to see how algorithms may influence individuals and society. If there is any explanation as to how the specific algorithm works, it is written in a very complicated language and still does not answer crucial questions.

We see our role as those who should find some answers where possible and detect specific black holes within the system. We are finishing our report with general recommendations and have separately prepared Policy Recommendations to address these emerging problems to policy and decision makers.

I.2. What is automated decision making and what we mean by alGOVrithms?

While performing research on new technologies which are not yet fully examined, a first challenge would be to precisely define the scope of the study. It is especially hard when the work is conducted by researchers from various countries looking into details of a variety of technological tools that have an impact on different aspects of human life. From speed cameras, through fraud detection and social benefits systems, to technologies implemented in the judiciary and around elections. The issue gets even more serious when these technologies may have direct (as in the case of fraud detection) or indirect (for example in systems allocating judges to specific court cases) impact on citizens. However, this distinction isn't clear and obvious. We had a discussion among research team members if the latter example should not be counted as a direct impact, because "participating in a court case where one side can "choose" a judge leads to unequal access to justice". We have not found the proof of such "manual" allocation of a judge, but yes, we do see that the division between direct and indirect impact can be variable, so we should have the same concern.

While deciding on the final scope of the study we were inspired by two definitions of automated decision making.

"Algorithmically controlled, automated decision-making or decision support systems are procedures in which decisions are initially—partially or completely—delegated to another person or corporate entity, who then, in turn, use automatically executed decision-making models to perform an action"[1]

"An Automated Decision[-making/-support] System is a system that uses automated reasoning to aid or replace a decision-making process that would otherwise be performed by humans. Oftentimes an automated decision system refers to a particular piece of software: an example would be a computer program that takes as its input the school choice preferences of students and outputs school placements. All automated decision systems are designed by humans and involve some degree of human involvement in their operation. Humans are ultimately responsible for how a system receives its inputs (e.g. who collects the data that feeds into a system), how the system is used, and how a system's outputs are interpreted and acted on."[2]

The second example of the definition is especially important, as one of the aims of the study was also to conclude and present recommendations with the hope to influence policies around creating such algorithms and their transparency. In fact, all automated decision systems are designed by humans and humans are ultimately responsible for their implementation. **Therefore, we are thinking about the topic less as a problem of the technology itself, but yet another human creation for which politicians and other public officials should be held accountable**. Because our organizations focus on transparency and accountability of decision makers daily, we do care about the technologies they introduce. We can trust technologies no more than we can trust politicians who allowed for the implementation of the algorithm.

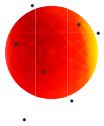
Still, the exact meaning of the word algorithm is not clear to many of the public officials. In Hungary, some of the bodies to which researchers submitted FOI requests, including the Prime Minister Office, have answered that "by using computers, they necessarily also use algorithms for their work - without naming any examples". We came across a similar answer in Serbia.

Although we are aware that the problem of transparency and accountability of automated decision making is much broader than just governments – citizens relations we have decided to limit ourselves only to those examples of ADM in which this technology influences the citizens' well-being. Based on the scoping study released in 2018 and as the result of the methodology meeting with co-authors of this report in Warsaw in October 2018[3] we have come up with the new term – **alGOVrithms which we define as:**

"Automated processes, used by government authorities in decision making directly or indirectly, whose output directly influences the citizens' well-being"

In other words, in the report, we are focusing on those examples of automated decision making/algorithms which are created by governments (or procured by public entities externally) and have a direct or indirect (supportive) influence on citizens or their specific groups.

1. https://algorithmwatch.org/en/automating-society-introduction/
2. https://ainowinstitute.org/aap-toolkit.pdf
3. https://medium.com/fundacja-epa%C5%84stwo/transparency-of-algovrithms-in-cee-and-beyond-transparencee-technology-for-transparency-in-cee-1093535c102c



I.3. Methodology

The methodology of the project was elaborated during the workshop held in October 2018 in Warsaw and improved in the following communication via a specially established Facebook group[4]. During the meeting in Warsaw, we invited external experts who were experienced in research projects on automated decision processes to support us with elaborating the methodology. Sociologist Alek Tarkowski from the Digital Center[5] shared his experiences from discussions held during the implementation of the Algorithm Watch project Automating Society and Zuzanna Warso[6], a lawyer at the Helsinki Foundation for Human Rights working on the Horizon 2020 SIENNA project[7] supported us with her expertise in ethics-related issues. We also had a chance to confront our hypothesis with Sebastian Szymański, philosopher, who specializes in ethics and practical ethics. His research interests focus on justice and ethical issues related to new technologies, in particular, automation and artificial intelligence. Together with Zuzanna Warso, he joined us for the panel at the Internet Governance Forum Poland in December 2018 to discuss "alGOVrithms. How to make the algorithms created by the authorities transparent?"[8] We also had a chance to challenge our initial findings with international experts gathered at the Digital Freedom Fund meeting in February 2019 in Berlin.

The outcome of the above-mentioned works was a detailed questionnaire consisting of topics to explore during the research in the relevant countries. The whole questionnaire can be found in Appendix I of the report. We have focused on the following topics:

1. **Do authorities implement algorithms in software?** *Name identified examples and describe how they work or might work by answering the questions below (also indicate which state sectors are using algorithms)*

2. **How does alGOVrithm work?** *This question served as a place to describe the "content" of the alGOVrithm*

3. **How is the alGOVrithm regulated?** *This question was aimed at gathering information about whether algorithms are regulated by the law (and describe if the answer is yes) and if not - whether there are any other documents (i.e. internal regulation) in place.*

4. **Who has created the algorithm?** *Here we were referring to at least two groups of people. If the algorithm and software which uses it was created by a public institution or outsourced to an external company and if the latter - on what legal grounds (ie public tender)*

5. **Is it open to the public and who has access to the algorithm?** *Is the software using the algorithm an open source? Is the algorithm code open source? Is it possible to access algorithms using freedom of information request, or is it restricted only to select groups?*

6. **Who controls the algorithms accuracy/fairness?** *Is there a system to perceive if there is doubt about the algorithm accuracy/fairness? Is there a system of remedies? Can individuals or organisations appeal to the algorithm's prediction? If yes, on what grounds?*

4. https://www.facebook.com/groups/1993471204062152/
5. https://centrumcyfrowe.pl/
6. https://algorithmwatch.org/wp-content/uploads/2019/02/Automating_Society_Report_2019.pdf
7. http://www.sienna-project.eu/about-sienna/
8. http://nask.platontv.pl/show/8474

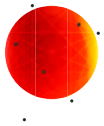
While working on the report researchers used mainly three ways to collect necessary information:

1. Desk research

2. Freedom of Information requests

3. Interviews with identified experts and decision makers.

Because of different situations in the researched countries, it was researchers independent decision to choose institutions FOI requests should be submitted to and whom to interview. Based on their findings they have prepared draft country reports which were compiled into this final paper overviewing the state of play of alGOVrithms in Czechia, Georgia, Hungary, Poland, Serbia and Slovakia.



II. GENERAL REMARKS

We have not identified existing overall state policy on the implementation of alGOVrithms in any of the countries participating in the research. While some of the countries such as Poland[9] or collectively V4 member states[10] work on Artificial Intelligence strategies, none of them introduced any comprehensive documents regulating the transparency and accountability of automated decision making. The report is probably the first document describing the broad perspective of this phenomenon and we hope that our policy recommendations will be taken into account by decision makers working on the implementation of such tools in the future. In Poland, neither the Ministry of Digital Affairs nor Chancellery of the Prime Minister worked on the topic. We haven't found any examples of ethical frameworks being introduced.

We have not found any example of the existence of the legal framework comprehensively describing the rights and obligations of the states and citizens in this regard. If some legal documents exist they refer to some aspects of examples of alGOVrithms such as systems allocating judges to specific court cases. This is the case in Georgia where Organic Law of Georgia on Common Courts was amended[11], Poland where Regulation of the Minister of Justice of 28 December 2017 amending the Regulation - Rules for the operation of common courts was introduced or Serbia regulating its system of selection of judges in The Court Rules of Procedure (2009)[12].

A general but still not comprehensive regulation of automated decision making can be found in Hungary were "The legislation on decision-making in general public administration procedures" includes regulation on automated decision making in decisions on requests by clients. According to Act CL of 2016 on General Public Administration Procedures[13] automated decision-making process may be used if:

a) so permitted by an act or government decree,

b) all data and information is at the authority's disposal at the time the application is submitted,

c) the decision requires no deliberation, and

d) there is no adverse party.

Such decisions have to be made within 24 hours. This, however, does not cover any governmental activity related to decision-making, policy making, preparatory work or any cases and public proceedings that are not treated as public administration procedures with the aim to process a request by a client.

In the European Union countries, general rules on the automated decision making were introduced thanks to the General Data Protection Regulation (GDPR) implementation in May 2018[14]. According to the art 22.1 of GDPR, "the data subject shall have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her." It seems that this provision is not relevant in most of the cases as there is a "human factor" involved or the algorithm has no direct impact on a citizen's situation. It seems that also fully automated systems of speed measurement identified in all countries are not subject to this provision as, it was explained on the example of Prague, Czechia "all the decisions should be overviewed first by a human (a member of the Municipal police)"[15].

Consequently, according to art. 15.1.h of GDPR "the data subject shall have the right to obtain from the controller confirmation as to whether or not personal data concerning him or her are being processed, and, where that is the case, access to the personal data and the following information: the existence of automated decision-making, including profiling, referred to in Article 22(1) and (4)

9. https://www.gov.pl/documents/31305/436699/Za%C5%82o%C5%BCenia_do_strategii_AI_w_Polsce_-_raport.pdf/a03eb166-0ce5-e53c-52a4-3bfb903edf0a
10. https://www.vlada.cz/assets/evropske-zalezitosti/umela-inteligence/V4_NON_PAPER_ON_AI_09_04_2018.pdf
11. https://matsne.gov.ge/ka/document/view/90676?publication=33
12. The Court Rules of Procedure (2009) arhiva.mpravde.gov.rs/images/Court%20Rulles%20of%20Procedure_180411.pdf
13. https://net.jogtar.hu/jogszabaly?docid=a1600150.tv&dbnum=62&getdoc=1 (2019-03-20)
14. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32016R0679
15. See also: S Wachter, B Mittelstadt, and L Floridi, 'Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation' (2017) 7 IDPL 76.

and, at least in those cases, meaningful information about the logic involved, as well as the significance and the envisaged consequences of such processing for the data subject." But experts argue to what extent the term "meaningful information" provides the whole description of algorithm[16] and it is still a matter of relevant jurisprudence to decide on the practical implementation of the clause in terms of the scope of information provided.

We have found that algorithms used in software created for automated decision making are not subject to transparency and access to the algorithms or the source code which includes them is not possible. In Poland, the Minister of Justice refused to provide the information requested by the ePaństwo Foundation and pointed out that the algorithm on the Random Allocation of Judges System consists of technical information and is not public information within the meaning of the Polish Act on Access to Public Information, and therefore is not subject to disclosure. According to provisions of the Act Amending Certain Acts in Order to Counteract the Use of the Financial Sector to Committing Tax Frauds which introduces STIR – Clearance Chamber ICT System[17] the access to the algorithm describing its operation is not public due to security reasons.

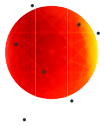
Access to the source code of similar solutions in other countries was also denied due to security or copyright reasons. Sometimes the product is owned by an external company, as was the case of the tool for the Judiciary Council in Slovakia where the Council informed the researcher that it is not in possession of the source code. In Czechia generally, the codes of the algorithms are not public. They are under copyright not owned by the public body (with the exception of procedures defined directly in the law).

Also in Serbia, the content of the source code is not available by request. The code is contained within the software which is produced by external companies through public procurement contracts. The contracts do not contain specific enough descriptions of the code, instead, they usually describe what the algorithm should do. The software generally is produced by outside companies. The owner of the system is sometimes the institution and sometimes the company – different solutions exist in practice. Also, the company can maintain exclusive rights to the source code in which case they are the only ones with access to the code and the only ones with the right to maintain the software. If the company keeps exclusive rights to the source code, then the institution does not have to go through public tender and can contract only the company with the rights. Nevertheless the publicly available information on Serbian systems of Random allotment of cases in courts and Allotment of cases to the enforcement officers (including knowledge on input and output data) allowed for testing their accuracy.

We have also not detected any case of a single institution which oversees or even possesses comprehensive knowledge on which automated decision-making systems exist in the country. In every researched country the situation is the same as in Georgia where the researcher noted that there is not any public institution, which is directly responsible for adopting and implementing policies regarding algorithms used in the public sector. On the contrary, each government organization can develop any software according to their needs and programs.

Apart from the case of the Serbian system of allocating the judges to cases, where the donor (EU) has audited the system, **no external and independent audits are set in place in order to monitor the accuracy and fairness of the algorithm's operation.**

16. Andrew D Selbst Julia Powles Meaningful information and the right to explanation. International Data Privacy Law, Volume 7, Issue 4, November 2017, Pages 233–242
17. www.dziennikustaw.gov.pl/du/2017/2491/D2017000249101.pdf



III. DETAILED ANALYSIS

III.1. Do authorities implement algorithms in software?

Thanks to extensive desk research including screening of existing legislation, interview and FOI requests we were able to identify some examples of automated decision making that falls under the scope of the definition of alGOVrithms. However, because of the general lack of transparency, the information of most of the detected algorithms did not allow for an in-depth study. Also because of the limits of reports we concentrated on broadly describing some, in our opinion, the most interesting examples and only mentioned the existence of the others. Because of the heated debate[18] on the usage of algorithms in the justice system we have decided to do more complex analysis in this area where possible. Unlike some Western countries, we have found only one example of Artificial Intelligence implementation or other forms of machine learning solutions. However, this does not mean that there are no potential risks connected with the impact of algorithms on human rights, including the right to a fair trial.

We have not examined examples of using algorithms in the area of security and special services. The level of accessible information is too small to build assumptions. **This does not mean that the debate on the transparency of such tools should not take place. We will try to find an opportunity to work on this in the future.**

18. https://rm.coe.int/ethical-charter-en-for-publication-4-december-2018/16808f699c

EXAMPLES OF ALGOVRITHMS

CZECHIA

- Speed measurement by municipal police
- Quality control including the case of presidential elections

SLOVAKIA

- EU program audit system of the Ministry of Finance ;
- Random Allocation of Judges in the Supreme Court;
- Random Allocation of Judges in the Constitutional Court;
- Random Allocation of Judges in the Judiciary Council; and
- State Veterinary and Food Administration audit system

HUNGARY

- Selection of cases for auditing by the Directorate General for Audit of European Funds (EUTAF)
- CCTVs operated on Margaret Island by the Municipality of Budapest Law Enforcement Directorate (FÖRI)
- Risk assessment by the National Tax Authority (NAV)
- Speed measurement by the Hungarian National Police Headquarters' (ORFK) – VEDA system

SERBIA

- Random allotment of cases in courts
- Allotment of cases to the enforcement officers
- The assignment of administrators to bankrupt companies
- The Constitutional Court is specific in the sense that it uses the algorithm contained in the proprietary software and does not have an explicit provision that aims to ensure impartiality of case assignment.
- e-Inspector

III.2. Case studies

Below you will find examples of automated decision making detected during the research. We have decided to present an in-depth analysis of tools which allocates judges or other public officials to specific cases as we were able to gather a reasonably large amount of information (although the access to the source code was denied) and we can compare them among at least four researched countries. In the following part, we are describing some other examples of using algorithms in automated decision making.

POLAND

- Random Allocation of Judges System (RAJS)
- Polish Ministry of Labour and Social Policy system based on profiling the unemployed to decide on how to distribute labour market programs
- Nursery Recruitment System in Wrocław Municipality
- STIR, Clearance Chamber ICT System
- Canard Speed Camera System

GEORGIA

- Algorithm for Distribution of Court Cases
- Algorithm for Verifying the Customs Value of Goods
- Asset Declarations Monitoring System of Public Officials, Social Service Agency, provides a range of services and benefits as according to the Georgian legislation

III.2.1. Random Systems of Allocation of Judges

This system exists in several researched countries. Poland, Serbia, Georgia and Slovakia. This is an example of indirect automated decision making. We believe that the algorithms should be used by the government with extreme caution, while the judiciary is an exceptional sector in the context of citizens' rights, freedoms and interests. Therefore, in this area, the implementation of algorithms should be subject to special control, including civic control. Our findings show that in none of the countries access to the algorithm and/or source code is possible. Therefore, despite the fact, that we can try to model how it works based on official regulations or users manuals, there is no certainty how that system in fact works. The main concern is how random are these systems and what kind of "tricks" may be used to "fool" it, as it may have a direct influence on judicial impartiality and the right to a fair trial. It also may be used – and according to our interviews in Poland – such assumptions occur – to force one judge to work excessively while favouring another and allow him to receive much fewer cases. We also found out that the issue of the transparency of the automated decision making is not only important for the wider public. Judges themselves are sometimes complaining that front-end of the systems and available information on the logic of the choice are not allowing them to compare their caseloads with other colleagues.

Algorithms on the selection of judges are present in common courts and rarely in other types of the judiciary. In Serbia and Slovakia, algorithmical systems of the selection of judges are present in Constitutional Courts, but only in the latter, the selection supposes to be random.

III.2.1.1. POLAND

– How does the system work?

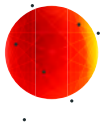
In Poland, since the beginning of 2018, the system of Random Allocation of Cases to Judges (also as "System") began to be used in all common courts to randomly assign judges to cases. The use of this System means that the algorithm determines which judge will receive a specific case to be heard. The Ministry of Justice introduced the System Losowego Przydziału Spraw (Random Allocation of Judges System, or SLPS) which has been operating in all 374 common courts across the country. With its daily random assignment of judges to new cases, SLPS is intended to guarantee judicial impartiality. "Assigning cases to individual judges must be completely transparent and free from manual control," the ministry explained in an announcement in October. As stated by the Polish Judges Association "Iustitia" the SLPS is fully controlled by the Minister of Justice – Prosecutor General, namely by a party or potential party to court proceedings, which is in conflict with international standards (ECHR judgement of 10/10/2000, Daktaras v. Lithuania – Application No. 42095/98). It is in this Ministry that the system's servers are located, which means that a failure in them will paralyze the allocation of judges throughout Poland[19].

According to "Iustitia" in order for the computer system to randomly assign cases to be able to serve the purpose of transparency and uniformity in the assignment of cases, the assumptions to the system should be clearly defined and the method of their implementation must be written up and verifiable. Meanwhile, neither the assumptions nor the principle of operation is publicly known – this applies to both the source code and the randomization algorithm.

There are official documents, as the report from the audit in Provincial Court in Toruń[20] that system is not working correctly - some judges are overloaded with work, while others are not being selected for long periods of time. According to the author of the lustration "the disproportion of the workload is clear". During the 7 months of the system's functioning, the unevenness of the burden of individual judges was expressed in assigning to some judges 5-8 more cases than the other judges. Also in Suwałki Provincial Court "By means of the division of activities, the president arbitrarily decided to divide the judges into two groups: those who settle only the first instance cases and those to whom appeals go. It just happens that in the group of the latter, about which some of the judges in the Suwalki unit speak as privileged, only functional judges were delegated."[21] This also has an effect in disproportionate workloads, as functional judges are less often allocated by the system.

As the access to SLPS algorithm was denied we can only rely on the description of the system from the content of the Regulation of the Minister of Justice of December 28, 2017, amending the regulation – Regulations of the administration of common courts. It is worth noting that the system was created before this date and tested only in three courts[22], but there is no information whether the test has had an influence on the final version of the system which was implemented on 1st. January 2018. According to one of the interviewed judges, "the system was first created by IT experts, and later someone described the effect in more legal language" which is not typical for other countries. In Serbia, the creation of the tool was preceded by a complementary legal framework. The same judge is claiming that there was no consultation with judges on any aspect of the IT system. Legal documents were consulted but only 2 weeks before the implementation of the system.

19. https://www.iustitia.pl/informacje/2172-response-to-the-white-paper-compendium-on-the-reforms-of-the-polish-justice-system-presented-by-the-government-of-the-republic-of-poland-to-the-european-commission
20. https://www.torun.so.gov.pl/container//sprawozdanie.pdf
21. https://prawo.gazetaprawna.pl/artykuly/1400289,losowanie-spraw-w-sadzie-w-suwalkach.html
22. https://www.prawo.pl/prawnicy-sady/od-dzisiaj-rusza-pilotazowy-losowy-przydzial-spraw,185745.html



According to the regulation, the process of assigning cases to judges proceeds separately for each of the categories of cases identified earlier. Its guiding principle is the participation of all judges in accordance with the percentages of allocation determined in the division of activities, which the courts publish on their websites.

The assignment procedure itself starts with the collection of all court cases registered on a given day in the secretariat, broken down into categories applicable to it. In order to avoid manipulation of the order of influence of cases, among the pool of all cases collected for a given faculty in a given category, the choice of the one to which the judge will be added will take place randomly.

The next stage of the assignment is to determine the pool of judges participating in the lottery draw (the pool). Of the judges to whom the case may be assigned, the judges with the smallest value of the so-called cost function (Fk) are chosen. The size of the draw pool is determined automatically depending on the number of judges participating in the draw. As a general rule, half of the court division members with the smallest value of the cost function (excluding the judges to whom the allocation was withheld or are absent for at least 4 working days), but their number can not be greater than 6. In the draw pool, the judges are ranked ascending according to the value of the cost function. Then the random number generator assigns a random number to the case, the reporter of the case is the judge having the random number in the pool that is the rest of the random number divided by the number of judges in the pool increased by 1. The increase by 1 is for the remainder of the division equal to 0 the system as the clerk pointed to the No. 1 judge.

According to the information from the Ministry of Justice: "the number of possible residuals from dividing the random number by the number of judges in the draw pool is equal to the number of judges in the pool and the probability of assigning the case to each judge in the pool is the same. The allocation in line with the allocation rates and the proportionality of the allocation to the nominal time of the judge (ie the number of working days after the absence) is achieved due to the fact that there are only judges with the smallest cost function in the pool that reflects the number of assigned conversion cases. However, in the case of judges with an allocation rate lower than 100%, the system counts the allocated case as the reverse of the allocation rate, eg in the case of a judge with a 50% ratio, the actual case is equal to two conversion cases, as 1 / 0.5 = 2. In contrast, after the absence period, the case actually allocated is equal to 252 / (252-N), where 252 is the number of working days in a year and N is the number of days of absence. Such a ratio ensures an allocation exactly proportional to the nominal number of days of the judge's work. The system assigns to the pool the random judges with the smallest cost function, ie the smallest number of assigned conversion cases."[23]

A separate draw in each category means that the draw in a given category (ie the value of the cost function in this category) has no impact on the random lottery in other categories. In each category, the system separately calculates the number of assigned conversion cases and determines the judges participating in the lottery.

According to interviewed judges (including those who have permission to enter data to the system), the tool is not transparent and data are not available for them. For the first 9 month, history of allocation was only possible to gather upon the request sent to the Ministry of Justice (nb. no request was ever answered). Only from the 30 September 2018 the possibility of viewing the history of selection was introduced but without cases before this data). The system is not transparent for judges as they only receive that they were selected to the specific case. They can't compare their results with others.

The system is under constant development. We are in the possession of the document from February 2019 in which Ministry of Justice[24] was informing courts presidents that because of updates the system could provoke some irregularities in allocating judges to cases admitting that some judges were heavily overloaded compared to others.

There are also signals that some of the judges may have been manually excluded from allocations as in the case of Maciej Nawacki, the member of the newly (and nontransparent) elected State Judiciary Council and the president of District Court in Olsztyn. According to Gazeta Prawna Daily, he has asked a secretariat employee to exclude his name

23. http://www.sejm.gov.pl/sejm8.nsf/InterpelacjaTresc.xsp?key=-3CA5613C
24. Ministry of Justice letter to presidents of courts, February 2019 no. DKO-I.071.176.2019

from the system allocating judges to one of the cases which occurred in front of Olsztyn Court.

- **How is the system regulated?**

The System was introduced by an amendment to the Law on the Organization of Common Law Courts[25] and the system was partially explained in the amendment on 27th December 2017 Regulation of the Minister of Justice of December 23, 2015 – Rules of office of common courts.

- **Who created the system?**

According to the response for the FOI request, the system was solely created by the IT services within the Ministry of Justice. Only a component of the software needed for the development of the tool was bought on the external market. The servers are hosted at the District Court in Gdańsk.

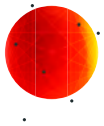
- **Is the system open?**

ePaństwo Foundation wanted to gain access to the source code and the algorithm of the System. In December 2017, the Foundation filed an application for access to public information to the Minister of Justice and asked for access to an algorithm on the basis of which the Random Allocation of Cases System operates. The Minister refused to provide information covered by the Foundation's application and pointed out that the algorithm consists of technical information which is not public information within the meaning of the Polish Act on Access to Public Information, and therefore is not subject to disclosure. Then, in December 2017 the Foundation filed a complaint to the Regional Administrative Court against the Minister, claiming that the algorithm that determines how individual judges are assigned to hear cases is public information and should be available to citizens. The Court by a judgment of September 5, 2018, dismissed the Foundation's complaint[26]. After receiving the grounds of the judgment, (on November 15, 2018) the Foundation on December 14, 2018, filed a cassation appeal against the judgment of the Court to the Supreme Administrative Court.

- **Who controls system accuracy/fairness?**

In each of the courts, its president (and presidents of the court's divisions) can check the overall effects of allocation in their specific entities through the management profile. However, they do not have access to the actual system to check what the reasoning was behind the allocation. It seems that only representatives of the Ministry of Justice have access to the tool (inc. algorithms) and only they - as stated in the above-mentioned document from February 2019 - can oversee the system operation.

25. dziennikustaw.gov.pl/du/2018/23/D2018000002301.pdf
26. II SAB/Wa 61/18, http://orzeczenia.nsa.gov.pl/doc/31D5979855



III.2.1.2. SERBIA

The following case study explains the working and the implications of the use of the algorithm for the random allotment of cases in Serbian courts. Even though the rudimentary system was introduced in the courts in the 1990s, the modern software that is in use today was developed between 2004 and 2008, as part of a donor-based push for a more efficient judiciary.[27]

By 2018 the software that implements the random allotment of cases in the courts was used in the whole judicial network in Serbia. As this is the most prominent and most widespread use of algorithms in the government in Serbia, the use of the software will first be described in greater detail. The final section discusses the possible ways in which the randomness can be avoided in practice.

- **How does the random allotment of cases work?**

The allotment of cases in the courts is based on two criteria. The first requirement is an equal burden of the judges, and the second is an equal probability of receiving a new case. The case allotment algorithm is part of the AVP software (*Automatsko vođenje predmeta*), a software for automatic case management. The central element of the software is the case counter.

Whenever a case is allotted to a judge, the number of cases in the counter is increased by one. Depending on how many cases a judge has in the counter, the algorithm will allot a new case to the judge that has the smallest number. If judges have an equal number of cases, they all have an equal probability of receiving a new case.

There are several additional criteria related to the case, not the judge, which the algorithm takes into consideration. If the case is classified as urgent, then the algorithm will consider only the number of urgent cases and allot the new case in the same way as the regular cases. If the case is classified as difficult, then again the algorithm will consider only those and follow the same procedure as with the regular cases.

The counters are periodically reset at the end of the distribution cycle. The cycle usually lasts one month or could be made longer if the number of newly received cases is smaller than the number of judges working in a particular legal area. When the counters are reset, all judges have 0 cases and they all have the same probability of receiving a new case.

- **How is the random assignment of cases regulated?**

The automatic case management software (AVP) was created in order to enable all the procedures from the Court Rules of Procedure (the Rules). The Rules are the basic document which regulates the internal organization and operation of all courts in the Republic of Serbia, adopted in 2009 and changed several times since then[28].

A section of the Rules regulates the allotment of cases in Articles 49 to 56. Article 49 lays out the main criteria for the allotment. The new cases are classified, with the aim of ensuring an equal burden for all judges, according to their urgency, type of procedure, and the legal area, and then randomly allotted to a judge, in accordance with the annual court work distribution schedule.

According to the Rules, cases can either be manually entered into the register according to the order of receipt and serial number or through the implementation of the business case management software. In those courts which have conditions for keeping electronic registers newly received cases are distributed "using a special program (mathematical algorithm) which makes it possible for all judges to have an equal number of newly received cases" (Art. 51). Here again, the Rules' main criterion is the equal burden of the judges at the end of the distribution cycle.

- **Who created the algorithm?**

The algorithm for the random allotment of cases was created as part of the software, first developed from 2004 to 2008 through a project of reform of judicial administration of commercial courts in Serbia "C Casa" financed by the USAid.[29] The software was developed by the private company *Mega Computer Engineering* which has developed the information system "Libra" (of which AVP is one part).

The pilot project was introduced in the commercial Courts of Belgrade and Novi Sad, and in 2008 in all other commercial courts in Serbia and the commercial Appellate Court. In 2010 the software was then implemented in all first and second instance

27. There is more than one information system used in different types of courts in Serbia. See: www.bgcentar.org.rs/konsultativni-proces-izrada-preporuka-za-vodjenje-jedinstvene-sudske-statistike/
28. The Court Rules of Procedure (2009) arhiva.mpravde.gov.rs/images/Court%20Rulles%20of%20Procedure_180411.pdf
29. .The Project for reform of judicial administration in commercial courts in Serbia (CCASA). More info here: arhiva.mpravde.gov.rs/cr/news/vesti/novi-sistem-za-automatsko-vodjenje-predmeta-u-trgovinskom-sudu-u-beogradu.html

courts – all commercial courts (17), first instance courts (67) and the whole system of higher instance courts (24) in Serbia[30].

Since the implementation, the software has been further developed and maintained through regular public procurements. All contracts are based on the Law on Public Procurement and the internet portal of the Public Procurement and Ministry of Justice website deals with the information on ensuing contracts. The AVP software including the source code is the property of the Ministry of Justice, except the software which was used in its making.

- **Who has access to the algorithm?**

The access to the software is regulated by the Rules of Procedure. The recording and allotment of cases are performed by the court clerk's office according to the annual court work distribution schedule, or a special decision of the president. (Art. 56 of the Rules)

However, the access to the code is reserved to the companies specialized in maintenance work. In the majority of the contracts that the company which produced the AVP software has with government institutions[31], the company remains the sole property owner of the source code, which excludes any other companies from access to the code and the maintenance work. In the case of the AVP software, the Ministry of Justice is the owner of the software. That means that third-party actors that have access to the software for the purpose of maintenance are selected bidders at the public procurement process, and their right of access, as well as the issues of privacy and sensitive information, are regulated by the contracts, which are a part of the public procurement documentation, available to the public.

- **Who controls the algorithms accuracy and fairness?**

The control of the algorithm can be divided into regular and extraordinary control. In general, the president, registry or court clerk controls the allotment of cases. (Art. 56) If the software is misused in any way, they should be the competent authority to establish it.

On the other hand, the response of the Ministry of Justice to the request for information of public importance was that an external evaluation was conducted, followed by the revision of the software, specifically the algorithm for the random allotment of cases was done through a "judicial efficiency" project financed by the EU during 2016 and 2017. However, no public information about the results of the evaluation is available, and it was not possible to establish where the results of the evaluation should be deposited.

Having in mind that there was a similar lack of information about the project which started the algorithm use, and which was funded by the USAid, the donor community definitely could do more to increase the transparency of the process of reform of public administrations by making the documentation about these projects public or easier to access.

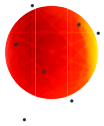
Analysis: How random is the random assignment of cases?

The development of the software was initiated by international donors, with the primary motivation of improving the efficiency of the judiciary. However, the inclusion of the random allotment of cases to the judges in the software, which was already existing in the Rules of Procedure, was intended to minimize the possibility of abuse and to ensure the "full extent of the right to the independence of judicial procedure."[32]

The random assignment of cases to the judges is one of the preconditions for the impartiality of the judiciary. The impartiality can be impaired in different ways and different motives, but in this case, it rests on the possibility of parties in the process to influence the assignment of the case to the judge that might be partial to the case for whatever reason. If any party in the case or a member of the judiciary can obtain such influence over the assignment of the case, then the parties do not have the guarantee of equality before the law.

Having this in mind, the fairness of the algorithm ensuring the random assignment of cases in the court is subjected to the analysis. To start with, two independent sources from the judiciary explained in similar terms that the random assignment of judges is not guaranteed in practice. There are several competing explanations of the exact mechanisms of how this is done. As it was not possible to access the code or the software itself, the explanations are based on software development material and user guides obtained through FOI, together with the rules of procedure and the interviews with the members of the judiciary.

30. www.mega.rs/sr/proizvodi
31. This is the case with the Hermes software that the units of local self-government use.
32. Dokument o razvoju avp softvera i dizajnu sistema, verzija dokumenta 0.2.0, p. 8.



The primary explanation of the potential misuse of the algorithm's impartiality in the assignment of cases is contained in the Rules of Procedure which defines the criteria for the assignment. As explained before, the primary criterion of the Rules are regulating and the software it's implementing is ensuring an equal burden for all judges. That means that the only circumstance when the judges have an equal probability of being assigned a new case is if they already have an equal number of cases. The response from the Ministry of Justice obtained through FOI confirms that the allotment depends on the number of cases the judge has and formulates this in the following way "the algorithm will randomly assign the case to the judge that has the smallest number of cases."

There is no randomness if the assignment primarily depends on the number of cases, so the question is whether the Rules and the AVP software allows the clerk who enters the data to know before the assignment the judge with the smallest number of cases and whether the case can be allotted to this judge in practice. It can be argued that the Rules of Procedure and the software allows this. Therefore, if three conditions are met - a) the entry to the system is not strictly following the order of reception, b) the court registry office has sufficient time and discretionary power to change the order of the entry into the system, and c) the name of the judge is known to the personnel at the registry office before assigning them the case, then the random allocation can be sidelined in practice.

The case management system is maintained by the Court registry office. According to Article 9 of the Rules, the Court registry office can form special organizational units, one of which is the office for Reception of consignments (the Reception office).

The time for the allotment is not strictly defined in the Rules of Procedure, however, the party which submitted the initial document to the court has the right to find out the number of the case and the name of the judge in charge of the case within three days after submission, which means the allotment should not take longer than this. In practice, smaller courts usually take one day between the reception and processing, while bigger courts with more consignments take two to three days. This means that the Court registry office can sit on the case received by the Reception office for a limited amount of time before assigning it a number and, therefore, assigning it to the judge.

The Court registry office sorts the consignment by criteria and then starts the procedure of assigning it to the judge. In general, the procedure of assignment should follow the order of the reception. However, two things are lacking for this rule to be followed. Even though the reception of the consignment includes stamping the time of the reception, this is not enforced in practice. Even if this was the case, and the paper consignments had the date and the time-stamped, the AVP keeps metadata on the date when the case was received, which judge received it and which person and on what date entered it into the system. It does not appear to hold information on the exact time the case was received, nor the time it was entered into the system.

Therefore, the first and the second condition that the order of the entry to the system is not strictly following the order of reception (no such data in the system), and that the registry has sufficient time (one to three days) to enter the case into the system are met. Finally, if the court registry office classifies the consignment and can change the order of the entry of the case into the system if the order of judges is partially known in advance, then the time of the entry into the system can be changed to coincide with a particular judge.

In general, when a new case is introduced into the system after all the information is entered, the number under which the case is filed as well as the judge it was assigned should appear in the new window, following the criteria of equal burden and random assignment, as explained earlier.However, the software allows the clerk to compare the number of cases each judge has received in a given time period. Therefore, if the clerk can hold the consignment and wait for the order of the judges to occur when a single one has the smallest number of cases, then there is an opportunity to assign the case to a known judge. It should also be noted that through the classification of the case, also done by the registry office, the clerk can use the criteria of urgency or difficulty to additionally filter the numbers of such cases each judge has, which is making the allotment to a known judge even easier. The more criteria, the less randomness.

In the scenario described above, the specific combination of the Rules of Procedure, the practice of the courts, and the software design ultimately allow the case to be allotted to a known judge. However, this process would include carefully following the number of cases the judges have and could be done in the court registry office alone. Based on the reading of the extensive software user manuals, there are several ways in which

post-hoc changes to the original allotment can be made, which completely rule out the randomness. These, however, imply some form of a decision to be made outside of the Court registry office, typically by the president of the court.

Upon the decision of the president of the court, the distribution of cases can be modified if an acting judge cannot handle the case, due to inability to work, absence or other reasons. The AVP software module "presignation" allows the clerk to transfer a case from one judge to another. The transfer of cases from one judge to another can be done in two ways in the software – by random allocation or manually. In the former case, the system is similar to the initial allocation – after choosing the case, the date for the start of the change is entered, and the software makes the allocation. In the latter case, however, it is possible to select the judges from the drop-down menu. The software does not show the information on whether the case was appointed to a judge on a random or manual basis. Therefore, in the scenario of presignation, or the change of the judge in charge of the case, there is a clear path towards choosing a known judge, which is possible only after the acting judge is formally withdrawn.

Finally, the "deletion module" allows the clerk to delete the case from the system, to enter or change the name of the initial judge, as well as to enter or change the name of the acting judge (if the initial and acting judge is not the same) and finally to change data about the judges on the case, including date of allocation and other information. However these changes are kept as logs in the system, and even though they are not visible in the user interface, the time of the change and the user who requested it is recorded and any post-hoc changes to the allotment would be identifiable.

The post-hoc changes in the allotment are possible, but they involve either formal procedures which would involve several actors from outside the Court registry office – a judge and/or a President of the court, or condoning of changes which would be registered as mistakes by the President or the personnel of the court responsible for the control of the use of software.

In conclusion, based on the analysis of the Rules of Procedure, the software documentation and the practices of the court as identified through the interviews, several paths exist in which the random allotment can be made not-so-random. Anecdotal evidence from two independent sources familiar with the workings of both lower and higher instance courts corroborated that the flows in the procedures allow for allotment of cases to known judges. The primary explanation is that the software allows the clerk to identify the judge before allotment – and the possible path was described above. It is said that the judges in the courts are incentivized to develop relations with the personnel in the Court registry offices because they can make sure the judges avoid being allotted "harder" cases.

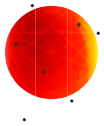
Two other explanations which shed additional light to the processes were offered in the interviews – one was that most of the allotment is indeed random in the first instance courts. There are no incentives to influence the allotment of the case in the first instance, as any verdict can be overturned at the second instance. Therefore, the indication is that the biggest pressure is at the higher instance courts and that the communication of cases between the first and higher instance courts is the real problem for the random allocation of cases. Finally, a perspective on the court hierarchy helps understand the position of the registry clerks. Unlike most other positions in the court, the job position of the Court registry clerks is said to be less stable and less protected. The precariousness of their position makes any possible demands to change the allotment of cases by third parties, judges or the president an influence that should not be underestimated.

The Constitutional Court

The Constitutional Court is specific in the sense that it uses the algorithm contained in the proprietary software and does not have an explicit provision that aims to ensure impartiality of case assignment.

The Rules of Procedure of the Constitutional Court regulate this issue. The filings submitted to the Court are received and registered at the office of the Court, according to astronomical time measuring (Article 40). Similarly to the system in the courts of general jurisdiction and the commercial courts described above, the cases are assigned to judge-rapporteurs using the algorithm contained in the OpenText document management system "Documentum". The algorithm is using four criteria - the time of submission, the type of the proceedings before the Court, the type of the contested act, and alphabetical order of judges' surnames to automatically assign the judge-rapporteur in all individual cases. (Art. 41)

The president of the court has considerable authority to assign one or more judge-rapporteurs, propose a release of a judge from engagement in a particular case, or may change the judge-rapporteur assigned to the case in cases of absence or



other justified reasons. (Article 41) In addition, withdrawal or exemption of the judges exists as an option which can be initiated by themselves or the propounders of the complaint. (Article 42)

The proprietary software was first acquired in 2011. In a response to the FOI request, the Constitutional Court responded that third parties never had access to the software/code which is owned by the OpenText Corporation. The maintenance of the license and software support is provided by third-party companies through public procurement in the bidding process, however, they do not have access to the code itself.

The second feature which makes the Constitutional Court different from the general jurisdiction courts is that the criteria used by the algorithm in the allotment of cases do not have the requirement of randomness which would ensure impartiality. This is perhaps understandable as the constitutional complaints require highly specialized expertise for the legal areas and the types of contested acts which are defined as criterions for allotment. In this sense, the impartiality gives way to the requirement of the expertise of the specialized judges to which the cases are being allotted.

III.2.1.3. GEORGIA

Algorithm for Distribution of Court Cases

The Supreme Court of Georgia, in response to the request for information on the algorithms in their system, informed IDFI that the technical support of the electronic distribution system was ensured by the Information Technology Group, which is subordinated to the High Council of Justice of Georgia. Accordingly, the Supreme Court of Georgia forwarded the information request to the High Council of Justice, for the purpose of reviewing it. In turn, the High Council of Justice explained that the list of the algorithms in the agency, their detailed description and the copies of the regulatory documents were confidential and would not be disclosed.

Therefore, IDFI used several online sources, the website of the Legislative Herald of Georgia (www.matsne.gov.ge) and reports prepared by local civil society organizations to study particularities of the electronic system.

Introduction of the Electronic System of Case Assignment in the Common Courts of Georgia

The electronic system for case assignment in Common Courts was introduced as part of the "Third Way" of judicial reform in 2017. In particular, on March 23, 2017, based on an Ordinance of the Government of Georgia a working group accountable to the Supreme Court of Georgia and the Ministry of Justice of Georgia was set up. It was tasked with leading and monitoring of the process of developing the electronic system of automatic distribution of cases. The working group was composed of representatives of the following public institutions:

- LEPL Smart Logic (under the Ministry of Justice)
- LEPL Data Exchange Agency (under the Ministry of Justice)
- LEPL National Agency of Public Registry (under the Ministry of Justice)
- LEPL Department of Common Courts (under the High Council of Justice)
- Tbilisi City Court
- High Council of Justice[33]

The working group drafted procedures for case assignments in about three months. The online system was first piloted in Rustavi City Court in July

33. Ordinance of the Government of Georgia, 23/03/2017 [Georgian] Available at: https://bit.ly/2Z4TBHo

2017, after which the new system came into force in the Common Courts of Georgia on December 31, 2017.

Goal

The development of the new system was an important part of the ongoing judiciary reform in Georgia. It aimed to ensure impartiality and independence of judges, equalization of caseload and reduction of the authority of court chairpersons to assign cases to particular judges.

Legislative Framework

The new provision on the random assignment of cases to judges in District (city), Appeal and Supreme Courts were added to the Organic Law of Georgia on Common Courts. In particular, it was determined that cases in courts of all instances must be distributed electronically and randomly. Additionally, in case of technical failures or system breakdown, cases will be assigned to judges based on the sequence of their submission and the alphabetic order of judges. The High Council of Justice was granted the mandate to approve major rules for automatic case assignment.[34]

Indeed, detailed rules were prescribed by the decision of the Council on May 1, 2017, which was later amended several times in the process of improving the electronic system.

How the System Works

Major rules for automatic case assignment are stipulated in the Article 5 decision of the High Council of Justice, according to which, the system ensures equal distribution of cases. To this end, it identifies the average number of already allocated cases, the number of cases assigned to each judge, as well as the number generated as a result of random assignment and processes all of these parameters. Most importantly, the difference between the number of cases assigned to judges with relevant speciality should not exceed three. As soon as the difference equals three, the judge with most cases will be excluded from the assignment process until the difference is reduced.[35] Hence, while generating and assigning cases to particular judges, the system considers only the quantity, not the complexity of cases.

However, a wide range of exceptional circumstances was also listed when cases are not distributed through the electronic system. For example, Article 5 includes the following exemptions:

- There is only one judge with the magistrate judicial authority in the respective municipality.
- There is only one judge of the relevant speciality in the district (city) court.
- There is only one on duty judge of the relevant speciality in the district (city) court.
- Also, with regard to cases of a certain speciality, there are 21 exceptional circumstances when civil, administrative and criminal cases are given to the judge who issued the judgement. [36]

Based on these exceptions, the following case assignment procedures can be distinguished:

Random Assignment
The electronic system automatically distributed/assigns cases to judges

Assignment in Exceptional Circumstances
Cases determined by the High Council of Justice. Cases are distributed by a registry official

Assignment based on the On Duty Schedule
Authorized registry official assigns cases with the consideration of the on duty schedule of judges

Assignment to the Magistrate Official
Cases that should be examined by a magistrate judge

Without Rule
When there is only one judge on the panel and/or of the certain specialty

34. Organic Law of Georgia on Common Courts [Georgian] Available at: https://matsne.gov.ge/ka/document/view/90676?publication=33
35. Decision of the High Council of Justice 1/56 May 1, 2019, Article 5
36. Decision of the High Council of Justice 1/56 May 1, 2019.

The system considers the workload of each judge when assigning cases. Normally, judges have a 100% caseload, however, later modifications made to the initial decision of the Council reduced the percentages of workload indicators for certain judges holding administrative positions. This further increased the volume of cases allocated to other judges, which was met with criticism from civil society organizations working on judicial reforms.

In addition, even though the reform aimed to reduce the power of court chairpersons over the assignment process, civil society organizations claim that the system still includes such risks. In particular, the court Chairmanship still has the right and power to: a) view the number of cases allocated to judges; b) increase or decrease the workload of judges; c) relocate judges of narrow specialties without providing justification; d) determine the schedule of judges. NGOs claim that these important powers, coupled with some vague provisions, create risks of manipulation and external interference in the case assignment process.[37]

37. Human Rights Education and Monitoring Center (EMC) and Institute for Development of Freedom of Information (IDFI), "Assessment of the Judicial Reform", p. 29. 2019. Available at: https://idfi.ge/en/assessment_of_the_judicial_reform

The Process and Technical Details of Case Assignment

In order to better comprehend the process of case assignment, the chart below displays major steps stipulated in the Operational Directory of the system:

Registration		
Claim and documents are submitted	Documents are formally checked	Documents are uploaded by the registry official into the system

Case Assignment	
Registry official assigns specialisation to the case	Registry official selects case distribution type/procedure

Confirmation	
The system generates bar code	Bar code is confirmed and relevant documentations are preserved

The High Council of Justice refused to provide IDFI details about the electronic system, including its operational or technical manual. Very general information in this regard was included in the report "Legal and Technical Analysis of the New System of Case Assignment in Common Courts" prepared by Georgian Democracy Initiative (GDI). GDI received this information from the Supreme Court of Georgia, which was responsible for the system maintenance at that time. Later, Information Technology group responsible for the system technical support was transferred and subordinated to the High Council of Justice. The latter responded to IDFI that due to security reasons documents regarding the system are confidential and cannot be provided.

Based on the GDI report, the software is developed in Microsoft Windows Forms with the use of C# programming language, .Net Framework 4.5. and DevExpress WinForm v.17. The module of random assignment (randomizer) of cases ensures allocation of cases among judges. The system uses Microsoft's standard functional random (Microsoft's inbuilt "Random" library).[38]

Technical Failures/Delays

The decision of the High Council of Justice identifying major rules of the electronic system includes provisions about system failures (Article 8). If such delays happen and last more than 2 days, cases are allocated without the electronic system, sequentially by the authorized official of the court registry.

In terms of procedures, the court Chairperson, deputy Chairperson, Chair of the panel/chamber or the authorized official of the court registry notifies the Management Department of the High Council of Justice, Department of the Common Courts and person responsible for effective functioning of the electronic system about the technical delay/failure.

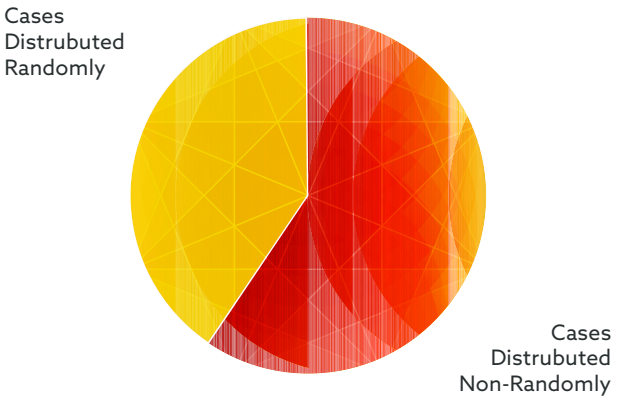
38. Georgian Democracy Initiative (GDI), Legal and Technical Analysis of the New System of Case Assignment in Common Courts, p. 19 Available at: https://gdi.ge/uploads/other/0/806.pdf

Statistics

Over the past year (between December 31, 2017 and December 31, 2018), a total of 254,852 cases were distributed through the newly developed electronic system, out of which 159,213 cases (62%) were allocated randomly. Out of the randomly assigned 159,213 cases, 137,934 were assigned at First Instance Courts, 16,416 at the Court of Appeals, and 4,863 at the Supreme Court.[39]

Number of Cases Distrubuted

(December, 2017 – December,2018)



As for the share of case assignment by allocation type, the following tendencies have been observed over the past years:

- About 60% of cases at First Instance Courts were assigned randomly.
- About 90% of cases at the Court of Appeals were assigned randomly.
- Absolute majority of cases (99%) at the Supreme Court were allocated using the newly developed system.

Statistics show that the most problematic issue of bypassing the electronic system in case assignment is particularly relevant for First Instance Courts. This challenge is significantly attributed to the insufficient number of judges. Data of the past year shows that cases were not randomly allocated in one District and 13 Magistrate Courts due to this reason. [40]

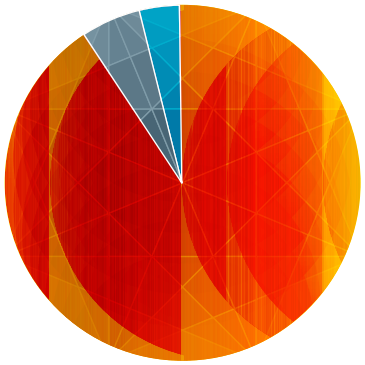
As for system failures, based on data from the High Council of Justice, a total of 6 temporary failures/delays were observed from December 31, 2017 till October 10, 2018. Due to these technical failures a total of 46 cases were distributed using the sequential method.

Cases Distrubuted at First Instance Courts

(December, 2017 – December,2018)

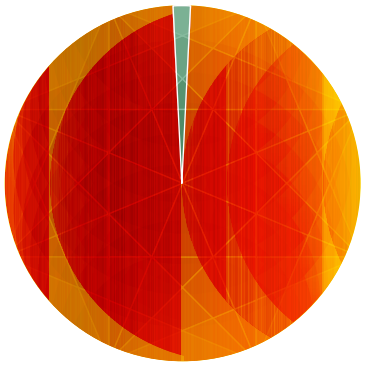
Cases Distrubuted at the Court of Appeals

(December, 2017 – December,2018)



Cases Distrubuted at the Supreme Court

(December, 2017 – December,2018)



- Random Distribution
- Distribution based on the duty schedule
- Distribution in Exceptional Circumstances
- Without a Rule (there is only one judge at the panel and/or with a specific specialization)

39. Human Rights Education and Monitoring Center (EMC) and Institute for Development of Freedom of Information (IDFI), "Assessment of the Judicial Reform", pp. 17-18. 2019. Available at: https://idfi.ge/en/assessment_of_the_judicial_reform
40. Human Rights Education and Monitoring Center (EMC) and Institute for Development of Freedom of Information (IDFI), "Assessment of the Judicial Reform", p. 15. 2019. Available at: https://idfi.ge/en/assessment_of_the_judicial_reform

III.2.1.4. SLOVAKIA

The similar system operates in Slovakia in the Supreme Court (SC), the Constitutional Court (CC) the Judiciary Council (JC) or Banska Bistrica Regional Court (BBRC). The software was procured or replicated as in the case of Judiciary Council working with the tool created for the needs of the Supreme Court. There are slight differences when it comes to the subject of selection:

- The Supreme Court – Once a file is submitted to the court, the system assigns it to the judge.
- The Constitutional Court – Same, but with judge rapporteur.
- The Judiciary Council – Same, but with disciplinary proceedings against other judges.
- Banska Bystrica Regional Court – Once submitted the request for execution, the system assigns the request to the executor office.

The Supreme Court system was delivered byan external provider without tender. In the case of the Constitutional Court the detailed information on the procurement is available online.[41]

Each of the system is based on the random selection principle and is assigning court cases to judge rapporteur. The data on which the system works in the Constitutional court comprise the list of judges, a submission number and schedule of work of the judges.

In Banska Bistrica Regional Court and the Supreme Court the knowledge about how the system works is kept by a dedicated project manager working in the e-justice section, while in other entities it is an employee of the general IT department. The same persons are responsible for monitoring the accuracy of the tool. Only in case of the Banska Bistrica Regional Court the monitoring of the accuracy of the tool is done through an auditing system using logs which are accessible in the Judicial System Management.

Interestingly, apart from the Constitutional Court, the service provider has a contractual responsibility to educate officials on how to use the system. Systems are hosted on internal servers of each of the courts.

Changes in the system (software) can only be introduced by the supplier in case of the Constitutional Court and by IT departments in two other institutions. While the system belongs to relevant courts in three cases, the system of the Judiciary Council is owned by the private company which is the supplier of the tool.

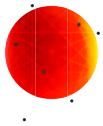
There is no publicly available explanation on how alGOVrithms work. They are regulated by several legal acts:

SC	Act. No. 757/2004 Coll. on Courts and on Amendments to Certain Laws, and not specified user manual
CC	Act No. 314/2018 Coll. on the Constitutional Court of the Slovak Republic and on amendments to certain acts
JC	Act No. 385/2000 Coll. on Act on Judges and Associates and on Amendments to Certain Acts, and not specified internal document
BBRC	Act No. 233/1995 Coll. on Bailiffs and Execution Activities (Execution Code) and on Amendments to Other Acts, and not specified user manual

When it comes to the information on how long the outcome data are being kept we could find some differences between entities.

SC/MoJ	Archived for 20 years due to Degree No. 543/2005 Coll.
CC	Published on the webpage and as stated, the CC does not delete them
JC	Decisions are archived in the system (from 2018). No time limits.
BBRC/MoJ	Information archived in the system. No time limits.

41. https://www.ustavnysud.sk/-/podklady-k-verejnym-obstaravaniam



Although, according to the researcher, the source code is treated as public information and could be disclosed through FOI request, all institutions refused to send it justifying their decision on copyrights protection

In the Constitutional Court 9 of 13 judges are vacant as the parliament has not voted the candidates for appointing. There are some cases when the system assigns the file/submission to the judge which is not occupied, as the setting of the assignation is among all judge positions, not only to real existing judges. This may cause problems in the future if the position of judge was not occupied for some time. This means that there are no steps in court proceeding and one can appeal on European Courts for Human Rights on violation of the right to a fair trial.

III.2.2. Allotment of cases to the enforcement officers in Serbia

Serbia is the only country in which the research was conducted where we have also detected the usage of algorithm on the allotment of cases to the enforcement officers.

The Law on Enforcement has been in effect in Serbia since 2011 and the provisions of the enforcement officers since 2012. The reasons for the passing of this law were increasing the efficiency of enforcement of court decisions, as well as relieving the courts of the enforcement activities.

The enforcement officers are lawyers who pass the necessary exams and have work experience in the enforcement activities. One enforcement officer is appointed per 25 000 inhabitants (Art. 469), and the enforcement officers are tied with the jurisdiction of the courts that cover a city or several municipalities.

All enforcement officers form the assembly of the Chamber of enforcement officers and the Chamber has a central role in the allotment of cases to the officers, which is based on the use of algorithm. In the next two sections of this chapter, the process and the circumstances of the working of the algorithm will first be explained, followed by the section which will use the available data to test the algorithm.

- **How does the algorithm work and how is it regulated?**

Following the 2014 changes of the Law on Enforcement, the Chamber officials announced that the allotment of cases is done by the method of random selection of enforcement officers. Not knowing which officer will get the case was supposed to ensure the equality of parties in the process and prevent any exclusivity, which existed before the legal changes, when the trustees would chose the enforcement offices by themselves.[42]

However, this explanation is not to be found in such a form in the existing laws and regulations. Instead, the Law (Art. 393) says that the officers are chosen evenly, following the alphabetical order of their names as recorded in the Directory of public enforcement officers.[43] The 2018 Rules of procedure[44] describe the process in more detail in Article 5 but closely following the requirements in the Law.

Articles 3 to 5 of the Rules of Procedure defines the Registry office of the Chamber as the main actor which allots the cases to the officers in the directory for the territory of the court for which the requests were initiated, following the alphabetical order, and also specifies that this is to be done through software which ensures the equal distribution of the cases. Article 4 requires that data on trustee requests has to be published on the Chamber's website, after making sure that personal data of the debtor is protected.[45]

The alphabetical order, as a legally defined criterion for sorting, does not ensure random allotment. However, if applied properly, it might lead to the same outcome of impartiality in the selection of officers.

- **Who created, who has the access, and who controls the algorithm?**

The algorithm is contained in the software "Cronus – raspodela" (Cronus – distribution). The software consists of three modules. The first module is the allotment of cases described above, the second verifies the received documents, and the third produces reports.

42. RTS, "Komora izvršitelja: Postupili smo po nalogu Poverenika", Feb 20 2015 www.rts.rs/page/stories/ci/story/124/drustvo/1835846/komora-izvrsitelja-postupili-smo-po-nalogu-poverenika.html
43. Zakon o izvršenju i obezbeđenju, www.paragraf.rs/propisi/zakon_o_izvrsenju_i_obezbedjenju.html
44. The full title: "Pravilnik o postupanju po zahtevu izvršnog poverioca Komori javnih izvršitelja kojem se podnosi predlog za izvršenje na osnovu verodostojne isprave radi namirenja novčanog potrživanja nastalog iz komunalnih usluga i srodnih delatnosti" www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/drugeorganizacije/pravilnik/2018/29/2/reg
45. Ibid.

The software was produced by the company "Stanković soft", based on the contract signed in 2015. The Chamber is the owner of the software, and the company uses it. The company is responsible for the allotment of the cases in accordance with the law and for the notification of all parties in the process. For this the company is paid a sum of 3 RSD for each allotment, capped at 60000 RSD (500 €) monthly. The company is responsible for protecting and storing the data.

The Chamber has responded to the request sent through FOI that the only persons who have access to the software are persons authorized to implement the allotment of cases. The software is protected by user name and password and only persons authorized by the chamber can access it. No third parties had ever requested access to the software.

The software was tested before the beginning of the implementation, especially the module for the allotment of cases, it has not changed the way it works since then, and the monitoring of the software is done daily by the Stanković soft company.

Analysis: Does the algorithm do what it is supposed to?

The Rules of procedure require the data on trustee requests be published online, in a machine-readable format. The data on trustee requests is updated on a monthly basis and it contains the name of the trustee, the amount of debt, as well as the name of the debt enforcement officer which was allotted the case. Based on the availability of the input (trustee request) and the output (allotment to the officer) it is possible to test how the algorithm works.

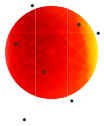
A separate database contained information on all active enforcement officers, sorted by the jurisdiction of the courts. As the Rules require the algorithm to equally distribute the cases to the officers which fall under the same jurisdiction, it was possible to conduct the comparison of the distributions between the officers in the same area. If the algorithm is working as it is conceived, then all the officers should have the same number of cases.

However, even if the officers are receiving the same number of requests by the algorithm, is the algorithm impartial regarding the value of requests it is allotting to the officers? One could imagine a scenario in which the algorithm is gamed in a way that allows some officers to receive cases with a higher value than the others. This could be motivated by the officer's fee for enforcement being proportional to the value of the debt.[46] Considering that the data contains the value of the cases, this can also be tested, with the null hypothesis being that there is no statistically significant difference between the values of cases allotted to the officers.

In order to test this, a sample was first extracted from the data. Considering that the software company responsible for the allotment is registered in the city of Niš, it would be reasonable to expect that the likelihood that an officer could try to influence the allotment through the company would be higher there than in other regions. Therefore, nine officers registered in the area of the jurisdiction of the Niš court were selected. Further, six months of the allotment of cases were selected, covering the second half of 2018, which should have been a sufficient time for any misuse to appear in the data.

The descriptive statistics in Table 1 show there was a total of 6229 requests allotted to the nine officers in the period of six months. In general, the number of requests allotted to each officer is close to 700, with the smallest number of cases being allotted to the second and eighth officer, and the highest to the first officer. A mean value of the trustee's request was 42854 RSD (360€).

46. Javnoizvršiteljska tarifa, www.paragraf.rs/propisi_download/javnoizvrsiteljska_tarifa.pdf



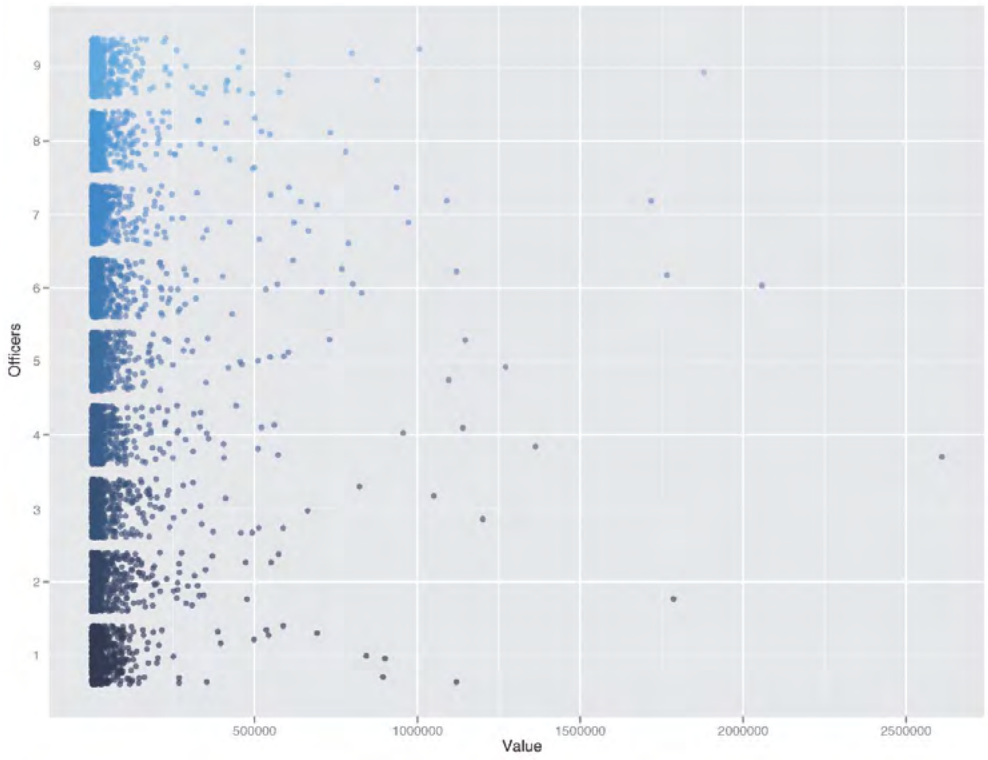
Officer	N	Mean	Stand. Deviation	Minimum	Maximum
1	720	40319	92635	900	1119868
2	679	42892	95686	900	1786547
3	683	41814	95111	900	1200751
4	693	46939	140489	722	2609965
5	709	40470	102461	900	1271003
6	682	47378	139224	600	2057726
7	693	44079	120513	900	1717919
8	679	38482	77437	900	779482
9	691	43436	113853	900	1879793
Total	6229	42854	110428	600	2609965

Table 1: Descriptive statistics

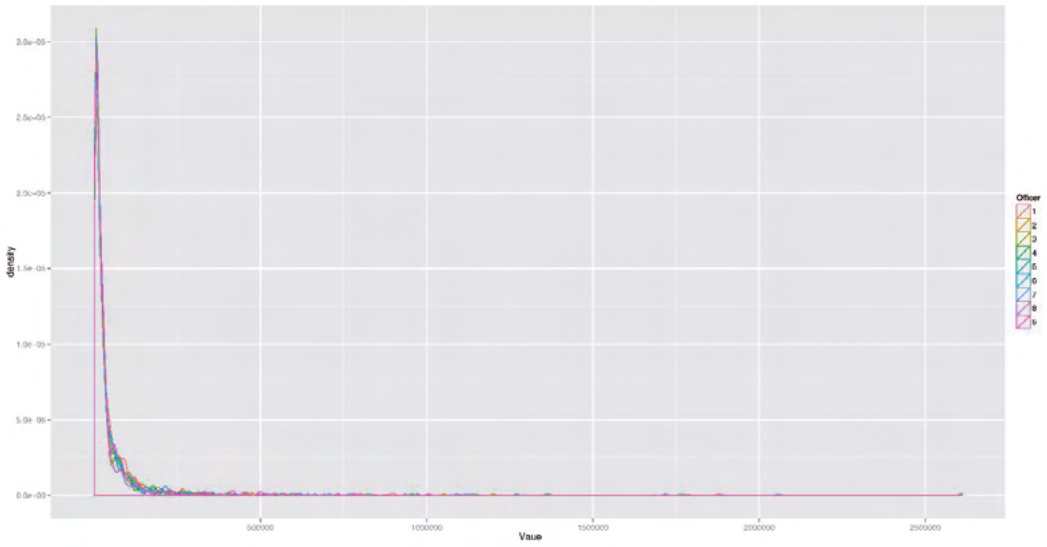
As the table shows, the mean value was not very different between the officers, and it seems the very high requests outliers (worth more than a million RSD) affected the distribution.

The distribution of the cases according to their value and the officers that they were allotted to is presented in Graphs 1 and 2. The plot in Graph 1 shows a relatively even distribution of a high number of requests with a value under 50000 RSD and similarly even distribution of the high values on the right side of the graph. The histogram in Graph 2 plots the probability density of the distributions for each Officer. What is clear here is that the distributions are very similar, all being positively skewed. Finally a simple statistical test, the one-way analysis of variance (ANOVA) shows that there is no statistically significant difference between the values of the nine groups of requests ($F(8,6220) = .504$, $p = .854$).

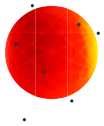
Taken together, these statistics do not offer sufficient evidence to rule out the null hypothesis – that there is no significant difference between the values of cases allotted to the officers. This can be interpreted in several ways. What this analysis of the sample of the requests show is that the algorithm seems to be doing precisely what it was made for – allotting the same number of requests to the officers and that it is doing it in an impartial way. This is especially significant keeping in mind that the sample was chosen as a "hard case" and that there are less reasons to expect the misuse of the algorithm in other areas. Finally, the fact that the inputs and the outputs of the algorithm are made available online, in an anonymized form, allows any interested citizen to check how the algorithm works which should be considered a positive practice.



Graph 1



Graph 2



III.2.3. Other examples of alGOVrithm usage

There are a number of other tools using algorithmic decision making set in place in researched countries. Below are some examples.

III.2.3.1. CZECHIA

Speed measurement by municipal police

Municipal police in several towns use algorithms for measuring the speed of cars. We describe the case of Municipal police in Prague, which is the biggest user of this method. The other towns are very similar. It is important to note that not all towns use such methods (e.g., Brno, the second biggest city in the Czech Republic, does not use such automated methods of speed measuring).

The system is regulated primarily in the Road Traffic Act (361/2000), which allows the police and municipal police to measure the speed.

The Police need to allow the measurement in particular places for municipal police.

The municipal police need to publish places where it may measure the speed.

Another law is the Law of metrology (505/1990) and its governmental decrees. Every device measuring speed needs to be calibrated according to the law.

The algorithms themselves are produced by the companies providing the measuring devices. There are no ethical standards in place. The values of the measurement are normally kept for half a year by the municipal police, while it may be longer if the process is not finished.

The automatic system of speed measurement in Prague consists of more than 60 devices to measure speed. More than 40 of them are section measurements (measuring speed between 2 points, these use induction loops in the roads), more than 20 of them are measuring immediately (speed cameras). Both systems also take photos of the cars and run recognition of the registration plate.

There are around 300,000 decisions (fines) taken every year using the data. The car owner gets a 600 CZK (25 €) fine if the speed was less than 20 km/h over the limit, a fine of 1000 CZK (40 €) if the speed is between 20 and 40 km/h over the limit. The cases of speed over 40 km/h over the limit are decided on an individual basis.

All the decisions should be overviewed first by a human (a member of the Municipal police).

The (state) police must decide, which places can be used for such measurement.

The measurements are done legally by Municipal police, however, the devices are owned by the city of Prague itself and managed by Technical management of roads, which is a company 100% owned by the city. The devices are supplied by a company called Camea.

Every measuring device needs to be verified by a body that has a state-issued licence for such a verification. The data traffic is also serviced by the company Camea.

The devices were publicly procured, but the new additions or supplements are ordered directly from the same company. The contracts are publicly available because Technical management of roads is required to do so by the law. The servers are owned by Technical management of roads and the program code itself is not public.

There are no random selections, the speed of all cars are measured.

The trustworthiness of the system for the Municipal police and the people (drivers) affected relies on the verification of the devices as required by the law.

The system of speed measuring is described on a webpage, but not in much detail. Other municipalities using such systems usually describe it in more details than Prague.

There are no verified problems with general fairness, but there were a couple of media pieces that some municipal police excluded local politicians from the measurements through whitelisting them.

The system of automatic measurement of speed was challenged several times at court. The courts concluded, among others, that municipal police cannot measure the speed in a different municipality or that the measurement cannot be done by the staff of an external company.

Also, there were several particular decision about concrete measurements, often leading to dropping the case (e.g. more cars on the photo, cars hidden by a tree, etc.).

There are also many cases dropped by the municipalities if the driver formally challenges the first verdict

from the municipal police (because the municipality has quiely decided it is not worth the money).

Case of presidential elections

The presidential candidates may choose two ways to qualify for the race. Either by getting support of members of parliament (20 representatives or 10 senators), or collect 50,000 signatures of eligible voters.

The latter case requires a statistical control done by the Ministry of the Interior to ensure that the signatures are actually of eligible voters. The method is similar to standard statistical quality control even if it is not really well designed to ensure the required results. However, an algorithm is used to randomly select two batches of 8,500 signatures.

Thanks to extensive analyses of the 2013 elections (2 candidates were excluded based on the quality control analysis), many details are public but the code of the algorithm itself is not public. There is a general description of the procedure (in more detail comparing it to the law). The targets are presidential candidates and their supporters.

The detailed results were published for the 2013 elections, when there were 2 candidates excluded from the election because of this quality control, a third candidate was also excluded by the Ministry of the Interior, but she challenged the decision successfully in a court of law. There were breaches of the random selections of signatures in the 2013 case as proven by independent experts, however the court ruled that this was not a problem. The problem was that the Ministry of the Interior first selected random sheets with signatures and took all the signatures from the selected sheet. Which does not lead to a proper random selection.

The law describing the algorithm is the Law of Presidential Elections (275/2012).

The producer of the random selection algorithm is unknown, the producer of the procedure on how to implement it is the Ministry of the Interior. There are no ethical standards in place.

The decisions are published and kept indefinitely by the Ministry of the Interior and the Czech Statistical Office (which is responsible for the data from the elections).

The case of public procurement monitoring

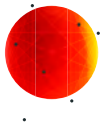
A well-known[47] case of supposedly random selection for public procurements led to changes in legislation and banning such procedures and so ending the use of algorithms in such cases. Random selection is debated for the selection of judges for a particular case, however the current debate is far from the result of implementing such algorithms. "Karlovarská losovačka" (Carlsbad draw) was a case from 2007 of pre-selection of companies for public procurement for building an ice-hockey arena in the Czech spa city of Carlsbad (Karlovy Vary).

The pre-selection was generally implemented to save money for companies if many companies applied for the same bid of a public procurement - just several companies were pre-selected for the real bid therefore not all companies had to prepare (costly) documentation.

The pre-selection was done by either using a computer or manually. The case of the Carlsbad ice-hockey arena went viral in Czechia (it also appeared on a Czech TV "Late night"-style show) because the pre-selection was captured on camera.

There were 16 companies applying in the bid and 5 of them were supposed to have been pre-selected. The draw of the last company - rumoured months ahead to be the favourite and the later winner of the contract, Syner - took more than half a minute.

47. https://www.youtube.com/watch?v=f0-SY70ZR08



III.2.3.2. HUNGARY

Selection of cases for audit at the Directorate General for Audit of European Funds – (EUTAF)

The main task of EUTAF is to act as the audit authority in Hungary for operational programmes and cooperation programmes financed from the European Union funds, and to implement related audit activities. Within their duties we assumed that it might use algorithms in risk analysis, therefore also personal data of managers of organizations that are beneficiaries of EU funds. In their detailed reply, EUTAF concentrated on one specific case of using algorithms in decision-making, namely the sampling method for choosing cases for audit. This mechanism is regulated in the Regulation (EU) No. 1303/2013 of the European Parliament and of the Council:[48]

(110) The audit authority should ensure that audits are carried out on the management and control systems, on an appropriate sample of operations and on the accounts. The audit authority's responsibilities and functions should be set out. Audits of declared expenditure should be carried out on a representative sample of operations in order to enable the results to be extrapolated. As a general rule, a statistical sampling method should be used in order to provide a reliable representative sample. Nevertheless, audit authorities should be able to use in duly justified circumstances a non-statistical sampling method provided that the conditions laid down in this Regulation are complied with.

This sampling method has been used since 2010, previously, article 1083/2006/EU (62) included the method being used. The actual algorithm is accessible in the guide nr. EGESIF-16-0014[49] (for the pre-2010 period, in the guide nr. COCF-08-0021).

Analysis of CCTV recordings by the Budapest Law Enforcement Directorate (FÖRI)

This organization is responsible for processing and analyzing the data of the Closed-circuit television (CCTV) surveillance systems in the city of Budapest. We received a detailed answer form the IT instructor of the organization. Accordingly, an analytical software is being used for the security cameras at the running track at Margaret Island since 2016. It analyzes the movement of the runners, and if detects anomalies or irregularities (runners running in the wrong direction, abandoned objects or manipulated camera signals etc.), it highlights the camera picture and alerts those in charge. The above mentioned algorithm was programmed by an external contractor as with most of Hungarian public administration algorithms.

The Hungarian Ministry of Interior Affairs plans to centralize Hungarian CCTV data in a single system within the so-called "Dragonfly Project" that would preserve data for 30 days.[50] The Hungarian Authority for Data Protection and Freedom of Information raised concerns about the planned platform.[51] We assume that the platform would likely use algorithms similar to the above-mentioned one.

Oversight of public finances at the Hungarian State Treasury (MÁK)

The Hungarian State Treasury is a central budget agency with a separate operation and financial management, with executive power, forming an independent legal entity with a national scope of competence, standing under the direction of the Minister of Finances. During the implementation of the budget, the Treasury is responsible for financing, money circulation, clearing of accounts, cash-, deficit- and state debt management, determined data supply as well as management and detailed registration of guarantees and loans extended by the state.

In regards to social security and the support of families the Treasury uses algorithms for customer relations management and pension model microsimulation.

Algorithms are also used to filter out the payment of benefits to recipients with public dues, hold these payments back and discharge them at the National Tax Authorities accounts. Algorithms used by the treasury were developed both in-house and by external contractors.

Camera system to detect speeding at the Hungarian National Police Headquarters (ORFK)

ORFK provided us with a detailed answer to our FOI request. ORFK stated that in cases of criminal offences, they don't impose fines based on any automatized mechanism, but in all their cases, officials in charge are liable to inspect and verify them. As for the algorithms, the VÉDA Public Road Intelligent Camera Network can be mentioned as an exemplary application, which uses them in its infrastructural monitoring and sanctioning units, but these algorithms are in correspondence with the general code of conduct. The VÉDA system, by processing the incoming data (road type, exceeding of the speed

48. https://eur-lex.europa.eu/legal-content/hu/TXT/?uri=celex%3A32013R1303 (2019-03-18)
49. https://ec.europa.eu/regional_policy/sources/docgener/informat/2014/guidance_sampling_method_en.pdf (2019-03-20)
50. https://hungarytoday.hu/cctv-is-it-big-brother-or-the-eye-of-providence/ (2019-02-10)
51. https://www.naih.hu/files/NAIH-6413-5-2018-J-181116.PDF

limit, make of vehicle, etc.) calculates the amount of the fine, that is displayed as a recommendation in the application. The placement of these speed devices are however carried out based on the police management's decisions. Apart from such decisions, the Hungarian Police also use mathematical and statistical algorithms in, for example, data processing or in accident modelling.

III.2.3.3. GEORGIA

Algorithm for Verifying the Customs Value of Goods

Unfortunately, the Revenue Service of Georgia left the public information request for algorithms in their system unanswered. However, IDFI managed to obtain information about the algorithm of the revenue service via publicly available legal acts on the Legislative Herald of Georgia. In particular, the information about algorithms related to the determination of the customs value of goods is reflected in Decree No.12 858 of the Head of the Revenue Service of Georgia of 1 August 2012, regulating procedures related to the entry, export and declaration of goods in the customs territory of Georgia.

The employee of the tax authority shall verify the accuracy of the use of the method of determining the customs value of declared goods according to the order of the Minister of Finance of Georgia according to the approved instruction. The customs value of goods is determined by the following methods:

1. Transaction Value Method
2. Transaction Value of Identical Goods Method
3. Transaction Value of Similar Goods Method
4. Retail Price Method
5. Method of Compound Value
6. Reserve Method

In the case of methods of transaction value of Identical goods and transaction values of similar goods, an algorithm for the sequence of actions is used in the process of determining the customs value of goods by the tax authority.

According to the schedule of functionality for this algorithm, the algorithm involves a yes/no questionnaire which helps the assessor decide which method to use while determining the customs value of goods.

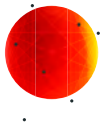
III.2.3.4. POLAND

STIR

System Teleinformatyczny Izby Rozliczeniowej [Clearance Chamber ICT System], is a newly created tool that collects financial data from banks and Cooperative Savings and Credit Unions to conduct analyses of operations in order to determine whether account holders perform certain types of actions that may indicate they may be using their bank accounts for illegal activity. If there is suspicion of an offense being commited related to funds on the account, then at the request of the tax authorities, the bank will be able to block this account for 72 hours which may be extended. The system is run by Krajowa Izba Rozliczeniowa S.A [State Clearance Chamber] which is a key entity of the Polish payment system infrastructure, which renders complex clearing services and other bank services. The Ministry of Finance in the reply for ePaństwo Foundation FOI request for more information about the supplier of the tool and the conditions of the contract refused to enclose the information on the basis, that Krajowa Izba Rozliczeniowa is a private entity and its operations cannot be revealed under the FOI laws.

Legal regulations regarding STIR have been in force since January 13, 2018, when the amendments introduced in the Act of August 29, 1997 – Tax Ordinance came into force. Under the Act of 24 November 2017 on amending certain acts to counter the use of the financial sector to tax frauds, a new Section IIIB was added to the Tax Code[52] – Counteracting the use of the financial sector for tax frauds.[53] According to regulations, The Clearing House may delegate activities related to the technical maintenance, repair or change of the STIR's functionality to the entrepreneur ensuring their safe and correct performance. The order to perform these activities is based on a contract, in writing, containing a list of employees of the entrepreneur designated to perform activities related to access to STIR, including algorithms.

52. http://dziennikustaw.gov.pl/DU/2018/1499
53. www.dziennikustaw.gov.pl/du/2017/2491/1



The risk indicator is determined in relation to the qualified entity on the basis of algorithms developed by the Clearing House, taking into account the best practices of the banking sector and cooperative savings and credit unions in the field of counteracting the use of their activities to crime and tax offenses as well as:

1) economic criteria - based on the assessment by the qualified entity of transactions using the account of an eligible entity in the economic environment, in particular in terms of the purpose of its business activity, or making transactions unjustified by the nature of the business;

2) geographical criteria – consisting of transactions with entities from countries in which there is a high risk of tax fraud;

3) subject-specific criteria – consisting of conducting high-risk business activity by a qualified entity from the point of view of vulnerability to tax extortion;

4) behavioural criteria - based on an unusual behaviour of the qualified entity in a given situation;

5) criteria of connections - consisting of the existence of links between the qualified entity and entities that are at risk of participating in activities related to tax fraud or organize such activities.

The algorithm is not open to the public. According to the law regulating STIR, who, without being entitled to do so, discloses or uses algorithms or information about the risk indicator, is subject to the penalty of deprivation of liberty for up to 5. If the perpetrator acts unintentionally, he or she is subject to a fine.

In December 2018, the Regional Administrative Court in Warsaw[54] issued a precedent judgment in the case regarding the extension of the account blockade based on the STIR findings. The dispute was won by the revenue office. The Regional Administrative Court found that if the blockage of the account was extended for three months, it does not need to conduct evidence proceedings. It is enough that after the analysis of cash flows, the clerk finds out there is a risk of using the bank accounts for extortion of tax.

Canard speed camera system

The project "Construction of a central system of automatic traffic supervision" is co-financed by the European Union from the European Regional Development Fund.

Photographs made by the speed camera and films from junctions on which cameras have been installed to monitor the passage at a red light, thanks to the Central Processing System (CSP) and wireless communication, are automatically sent to CANARD's employees. Information on violations sent by devices is verified by the System in terms of the possibility of their further processing and the possibility of using it as evidence in the case of infringement of traffic rules. Using CSP to CANARD, information from recording devices containing, among others, time and place of committing the offense, photograph of the vehicle along with its registration number, speed registered by the device and information on the speed allowed on this section of the road, as well as photos from intersections covered by red traffic monitoring. The system consists of 400 stationary speed cameras, 29 mobile units, 29 road-based traffic measurement systems, and 20 devices that register vehicles crossing intersections at a red light.

The decision to fine a driver is not fully automatic. After verifying the evidence, CANARD employees conduct further explanations regarding the violation of traffic regulations. Then to the owner of the vehicle, established thanks to the automatic exchange of information with the Central Register of Vehicles, a call to indicate the driver of the vehicle is directed.

According to information published by Puls Biznesu[55] "In the case of electric cars, the system [Central Vehicle and Driver Register] gets information about the lack of data or the message "unknown car, legally registered". It is responsible for the algorithm introduced years ago, which was supposed to make some cars, eg operational service cars, not receive fines."

In 2018, a huge part of speed cameras installed in roadside masts lost their legalization. Because this case was overlooked, for a long time no appropriate agreement was signed, based on if it would be possible to issue the so-called re-legalization. At the beginning of 2019, just over 150 of 400 radars were operating. The system was again fully operational by the end of March 2019 and GITD has plans to develop it further.[56]

54. III SA/Wa 2057/18, http://orzeczenia.nsa.gov.pl/doc/AB2D021C15
55. https://www.pb.pl/elektryki-fotoradarom-sie-nie-klaniaja-938001
56. http://www.brd24.pl/infrastruktura/wszystkie-fotoradary-canard-dzialaja-juz-maja-legalizacje/

School systems – allocation of children at schools

In 2018 parents in Wrocław, Poland were alerted by irregularities in the operation of the system recruiting children to nurseries in the city. Recruitment was based on an algorithm that took into account data from parents' declarations (including the child's age, on September 1). On this basis, the algorithm calculated points. After summing up, it automatically qualified children for individual nurseries, and placed them into appropriate groups. Based on the system's calculations, information was sent to parents but they soon discovered that the system had miscalculated the data and falsified results. According to the representative of the Wrocław City Hall "the system had a problem with children who were born in between two age groups and wrongly left out children that should have been attributed to this group. And so part of the children were qualified for the first age group, though it should have been the second. The problem concerned nearly 300 families".[57]

The system was built by a private company which apologized for the problem. Nevertheless, parents were complaining that "in order to have access to up-to-date recruitment information, we need to organize on social networks, compare results, collect errors, inform the office of shortcomings, tear apart messages from officers who are completely unprepared for providing information, who send us back to other equally uninformed officials. Then we write to the appropriate institutions without receiving an answer."[58]

Social Benefits – Profiling Unemployed

The Polish Ministry of Labour and Social Policy implemented in 2014 a system based on profiling the unemployed to decide on how to distribute labour market programs among specific categories of citizens registered as unemployed (e.g. job placement, vocational training, apprenticeship, activation allowance). The system worked on data collected during a computer-based interview with the unemployed combined with 24 different dimensions implemented in the electronic database and each of them is assigned with a score. The final score is determined by an algorithm. The Panoptykon Foundation which performed an in-depth study[59] on algorithms also claimed that citizens are restricted from receiving access to information on how the system works as its operation is treated as confidential. The case against allowing to use the algorithm was brought to the Constitutional Tribunal which decided by the end of 2018 that the provision allowing for the algorithmic profiling is not compliant with the Constitutional right to privacy. In 2019 the Ministry has announced that it will stop the usage of the tool.[60]

III.2.3.5. SERBIA

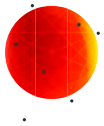
e-Inspector

This development in the field of use of algorithms took place during the writing of this report. From January 1 2019, a new information system for the coordination of inspections has become operational. The director of the Office for Information Technology and e-Government described its benefits as increased transparency, higher efficiency and reduced corruption.[61]

The implementation of the software started with the four inspections: trade, labour, administrative and sanitary. The remaining 37 inspections are in planned to be transferred to the information system by the end of 2019.[62] Even though the timing of this pilot program did not allow for the systematic collection of data, some basic information about the algorithms are available.

Inspections have until recently worked without the exact plan of control, which means that for instance only one producer or one type of product could have been repeatedly checked. The lack of sampling procedures meant that the costs for some procedures were higher than for others.[63] This in turn has led to frequent complaints to the partial behaviour of inspections, whose decisions were not based on the assessment of risk but were arbitrary.[64]

57. https://gazetawroclawska.pl/bledy-podczas-rekrutacji-do-zlobkow-rodzice-to-skandal-miasto-przeprasza/ar/13261821
58. https://wroclife.pl/wroclife-poleca/rekrutacja-do-zlobkow/
59. https://panoptykon.org/sites/default/files/leadimage-biblioteka/panoptykon_profiling_report_final.pdf
60. See: https://algorithmwatch.org/en/story/poland-government-to-scrap-controversial-unemployment-scoring-system/
61. Beta, "Kancelarija za IT i eUpravu: Od danas počinje primena informacionog sistema e-Inspektor", January 1 2019 beta.rs/vesti/drustvo-vesti-srbija/104167-kancelarija-za-it-i-eupravu-od-danas-pocinje-primena-informacionog-sistema-e-inspektor-video
62. Paragraf, "e-inspektor: Osim inspektora, platformi će moći da pristupe i nadzirani subjekti, ali samo u podatke koji se odnose na njega" www.paragraf.rs/dnevne-vesti/140119/140119-vest17.html
63. Paragraf, "Zakon o inspekcijskom nadzoru" www.paragraf.rs/dnevne-vesti/040316/040316-vest9.html
64. Ami radio, "Održan sastanak o unapređenju inspekcijskog nadzora i borbi protiv sive ekonomije" June 22 2018 www.amiradio.rs/info-servis/odrzan-sastanak-o-unapredjenju-inspekcijskog-nadzora-borbi-protiv-sive-ekonomije/



The new changes in the law meant that the selection of objects for inspection, the scope and incidence of the inspection oversight should be based on the risk analysis which in turn should be conducted based on objective criteria and quantitative data.[65] The reason risk assessment affects the impartiality of the inspector is that the Law (art 18) prevents the inspector of controlling the object for which the risk assessment was negligent, even if there is an individual request by a third party.[66]

The regulation further defined that the risk assessment in general inspection oversight is conducted by using software, and based on the data drawn from the information system, and which includes a wide selection of different sources, from domestic and international databases, to information collected through previous inspections, to self-assessments of the objects based on the control lists, etc.[67]

The e-Inspector software was created in 2018 by the company Enetel solutions to implement these changes in the law. The risk assessment is defined as the key module of the risk-based system of inspections. The algorithm in the software uses the static and dynamic data to sort the objects by the level of risk and to allow the planning of the inspection work. The algorithm's role is to signal to the inspector when the early warning signs appear that the risk of unwanted consequences is higher, in order for the inspection to take place.

The software does not only quantify the risk based on the algorithm and the available data it also automatically offers solutions in the given situation, which is a clear case of automatized decision making although we would treat it more as the "supportive" algorithm. The head of the Ministry for trade office for training and reporting emphasized that the software prevents the situations in which objects were treated differently in the same situations.[68] In addition, by using the software, different inspections can start using data collected from inspectors for different areas and include it in their own assessments.

In this case, we see the development of an algorithm in a sector further from the judiciary, and involving a more complex sorting algorithm. It will be interesting to follow the developments and hopefully test the outcomes at some point, if the data ever becomes accessible.

III.2.3.6. SLOVAKIA

European Programs Audit System

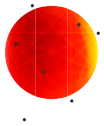
Ministry of Finance – The ministry is the body that can do an inspection/an audit for subjects that receive the funds from European programs. It is regulated by the Ordinance of the Ministry of Finance of the Slovak Republic no. 15/2011 (Decision of the Minister of Finance of the Slovak Republic on the issuance of the Statute of the Managing Committee for the Informative Accounting System of ISUF Funds as amended by Appendices 1 and 2). The program runs on the internal server and it is owned by the Ministry of Finance of the Slovak Republic under contract no. 2016/232 ISUF and related productive operation.

The ministry uses algorithms to dedicate subjects for such an audit. The algorithm is not accessible based on the fact that according to the law, this is sensitive information.[69] The system is procured and the procuring documents are available. The system uses random selection mode, although the value of the project can play a role while selecting units to check. The data for the sampling system is recorded by export from the ITMS2014 + system, which the certification body sends to the audit authority after the end of the accounting year. The audit authority then chooses the appropriate sampling method in the system and defines the parameters necessary to calculate the sample size. The system calculates the desired sample size and then selects a random sample of operations to be subjected to government audit based on the calculated sample size and defined method. It is probable that the Director of Planning and Methodology of the Audit and Control Section within the Ministry of Finance is aware of how the system works and is supervising it but the research has not identified the specific audit system in place, as well as no explanation on its operation was published on the ministry's website. Only the ministry's representatives and authorised representatives of the supplier can introduce changes in the system. All samples are archived in the system from the start of using the system (2010).

65. Ministry of Trade, Annual plan of trade inspections for 2019, mtt.gov.rs/download/gp19.pdf
66. Zakon o inspekcijskom nadzoru, www.paragraf.rs/propisi/zakon_o_inspekcijskom_nadzoru.html
67. Уредба о заједничким елементима процене ризика у инспекцијском надзору (Art. 7) www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/vlada/uredba/2015/81/2/reg
68. Paragraf "e-inspektor..." www.paragraf.rs/dnevne-vesti/140119/140119-vest17.html
69. section 2, point k) Act No. 45/2011 Coll

Veterinary Inspection

The system runs by the State Veterinary and Food Administration (VFA) and selects the subjects for veterinary inspection. The subjects are farmers that raise animals for food production. The selection made by the system is just advisory. It is still the decision of an inspector to decide on the subject for inspection. The VFA provides only the description of the tool, but not disseminating source code. The system is based on the risk analysis. There are ad-hoc audits and internal and external administrators of the tool are in place. Information on selected samples is archived by the system. The system was created by the external company through single source procurement. The company had to provide at least one training for public officials on how to use the system. Only the supplier can introduce changes in the system.



IV. CONCLUSIONS AND RECOMMENDATIONS

IV.1. CONCLUSIONS

The outcomes of the report unfortunately, confirmed our intuition and initial hypothesis. But the aim of the report is not only to focus on disadvantages of the process of creating alGOVrithms in Central and Eastern Europe, Balkans, and Caucasus but, first of all, to deliver an overview of existing problems, classify them and present practical solutions.

It has to be underlined the problems which we encountered in researched countries are not unique. Also in other parts of the world similar discussions facilitated by Civil Society Organizations and experts are taking place. We want to use this opportunity to stress that using automated decision making in the region is still on the low level and to invite policy makers, authorities and any other community engaged in the topic to be involve in such discussions and to elaborate solutions in a collaborative manner.

The main problems we have detected during the research are connected with the following fields:

- **Lack of consistent policies**

We have not seen that governments are devoting resources to elaborate general policies on the implementation of automated decision making. There are examples of more or less fragmented policies on Artificial Intelligence which may be in the future a part of alGOVrithms for example in Poland or amoung V4 partnerships but they are not responding to the problems existing here and now.

- **Lack of transparency and lack of the model of including society and experts in creating automated decision making**

There is a general lack of transparency of the source code or other technical aspects of algorithms. Some laws or jurisprudence is supportive of the statement that these are not public information or the access is restricted by copyrights, state or economic secrecy. This excludes any meaningful civic or independent monitoring.

In the vast majority of examples we have not found the will from a side of governments to engage multidisciplinary approaches in the process of the creation of algorithms. This is mainly the process which is restricted to a limited cooperation between public officials and IT companies or IT departments. Our understanding is based on interviews with relevant public officials or thanks to the information gathered through FOIA requests is that even this limited cooperation is not based on any methodology and both parties are working in silos.

- **Lack of the model of creating specific automated decision making**

There is no model of elaborating the impact or needs assessments. Governments are not working on defining potential risks for citizens or other stakeholders influenced by alGOVrithms.

There are no consistent policies and methodologies on how to evaluate the usage of specific tools

- **Lack of the model of independent monitoring and auditing of automated decision making**

The usage of algorithms is only audited and monitor by public officials and IT companies involved in their creation. Even this internal model is irregular and devoid of any methodological approach. This is also connected with the lack of transparency of the outcomes of internal audits and the obligation of revealing proactively any incidents of malfunction.

- **Lack of legal provisions on potential remedies and compensation**

When the citizen is directly or indirectly discriminated against or in any other way negatively impacted by the usage of algorithms, the only way to contest the decision is based on general provisions of juridical control over the public administration. In our opinion, taking into consideration the complex nature of automated decision making and blurred responsibility this general solution is not protecting enough individual rights of citizens. We also see lack of understanding of the topic among judges.

IV.2. RECOMMENDATIONS

With the knowledge gathered in this report, it is a good time for governments to implement some fundamental rules on how the system of alGOVrithms should work. We are presenting some of our main recommendations below but the more detailed document (Policy Recommendations) will be prepared to address policy makers generally and in the relevant countries. We see a rapid need of:

- **Introducing policies on algorithms implementation**

As discovered during the research the coordinating authorities like Prime Ministers have no idea that algorithms have already been introduced by their dependent entities, not to mention other public institutions. Governments should introduce complementary policies including ethical guidelines to make sure that algorithms are not created in silos and the system is synergic. The policy should also introduce obligatory audits of systems performed by external and independent bodies.

- **Introducing Algorithmic Impact Assessments**

We see the need of introducing an Algorithmic Impact Assessment (AIA) based on the systems created in the area of law-making like Regulatory Impact Assessments. When the Algorithmic Impact Assessments are an obligatory part of implementing any similar technological solutions into state-citizen relations, we would know what the government or its entity want to achieve, how it will measure the success, what groups are impacted or what risks can occur and by which means they can be prevented. The AIA should also provide the ground for refusing the implementation of algorithms when risks are higher than benefits. AIA also gives the opportunity to explain how the algorithm will work, what data will be used and what is a desirable outcome.

- **Introducing transparency clauses in contracts with companies delivering the software and open access to the source code**

In the vast majority of cases there is no access to the source code based on copyright clauses or other reasons. In some countries the source code is not considered public information. The access to the source code should be given by default and only when explicitly justified (for example based on the state security) the public entity can refuse to reveal the technical aspects of algorithms.

- **Issuing guidelines explaining the operation of algorithms**

The guidelines are needed not only for the wider public but also for public officials directly or indirectly working with the tool consisting of algorithms. This will support the process of explaining how the algorithm works and what the potential risks are. This will also support courts when they rule on the cases where the citizen is confronting the decision which was made directly or indirectly through automated processes.

- **Elaborating the review and remedy of the system**

In all of the researched countries there is only a general right to undermine the automated decision making by submitting the case to the court. This should be treated as the last resort. Public administration should guarantee that in the case of any mistakes or other irregularities connected with alGOVrithm operations the review (audit) and remedy systems are in place.

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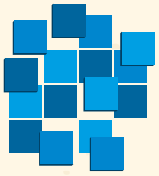

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