

NON-PAPER

SEVEN STEPS FOR INTRODUCING INTERNET VOTING IN THE REPUBLIC OF MOLDOVA

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To the attention of the: *Central Electoral Commission
Parliament of the Republic of Moldova
Government of the Republic of Moldova
President of the Republic of Moldova*

CONTEXT

The Republic of Moldova has a voting system that offers restrained opportunities for the citizens living outside the country, people travelling on election day or those with limited travel possibilities. The number of such citizens is significant and their inability to vote is a major problem for them and for the whole democratic system in terms of political representation. The society and current circumstances are different from a few decades ago and the need to implement alternative voting methods is no longer a choice but a necessity. Most countries in the world, with similar circumstances, are implementing alternative voting methods or are considering implementing them. The Republic of Moldova is not an exception.

One of the alternative voting methods that is most frequently discussed in the Republic of Moldova is the internet (online) voting, given the many advantages it offers once implemented. The online voting is **convenient**, can take place **from any location where there is an internet connection**, and is the cheapest way of voting, both from the perspective of the voter and the authorities organising the elections. **Citizens can vote more than once and only the last voting option will remain valid**, which excludes any possibility of other people influencing the voting option. **All processes related to online voting take place quickly and securely**, including voter registration, verification of identity, direct voting, vote counting, transmission and registration of final results, auditing after the election is completed.

At the same time, there are also a number of challenges that need to be addressed for the introduction of internet voting: **credibility issues in e-government processes, digital identification mechanisms and processes, trust in electoral principles and in the integrity of the institutions involved in organising the voting process**. Given the regional security challenges of the Republic of Moldova, another constraint is **ensuring the cyber security and resilience of the technical solution for online voter registration and counting**. However, these issues can be addressed and resolved by the authorities in the preparation and testing stages of online voting to facilitate optimal management of the voting process.

Currently, the Republic of Moldova has a unique opportunity to implement the internet voting, having practically all the necessary infrastructure, including various secure digital authentication tools, a legal technical framework, a wide openness on the part of the authorities in the development of this system and a much better understanding, at the societal level, about the functioning of online voting and the advantages it can generate. [The Action Plan of the Government of the Republic of Moldova](#) foresees a comprehensive analysis of the feasibility and implementation of e-voting, and its piloting in one of the next electoral exercises.

We are, therefore, recommending further a series of actions which are necessary to develop the internet voting system in the Republic of Moldova.

STEPS FOR INTRODUCING INTERNET VOTING

1. **Wider societal debate regarding the operational principles of internet voting, the advantages of its implementation and the associated risks.**
 - Even though the problem caused by the lack of alternative voting methods has persisted for decades, Moldovan citizens know very little about the working principles of internet voting, the benefits it can bring, the associated risks and how they can be minimized or excluded.
 - **Organising broad debates** is essential for building a national consensus, both at political level and at the societal level. Considering that the implementation of e-voting is a decision that cannot be politicised, it is necessary to **involve all stakeholders from various fields** (political groups, academic groups, IT and cybersecurity specialists, state institutions, media, etc.).
 - **Sound cooperation between all stakeholders** is extremely important in order to identify the most likely and secure way to implement internet voting, what are the principles and building blocks of this digital ecosystem, in order to gradually increase trust in the online voting system from the very beginning of the discussions on this topic.
2. **Set-up a working group for the development of online voting and the primary conceptualisation of the project.**
 - **Central Electoral Commission (CEC) to set up an Working Group for the Internet Voting Development (WGIVD).** WGIVD will serve as a platform for coordinating all necessary efforts and will be responsible for **providing proposals and recommendations to CEC** and all institutions that will participate in the online voting implementation project and will be responsible for monitoring the implementation of the necessary steps for the introduction of online voting.
 - WGIVD will be responsible for the **conceptualisation of the online voting system**, with the utmost engagement of all stakeholders and responsible institutions. Following the development of the concept, the system will be subject to **a thorough security analysis by a specialised group of IT specialists**, whose decisions and recommendations will be compiled, together with the concept draft, forming a common document that will describe the basic elements and principles for the implementation of the online voting system.
3. **Legislative amendments are required, based on the widest possible political consensus.**
 - The Parliament should hold **wide-ranging debates with electoral and cyber security experts** to highlight the benefits of online voting for all Moldovan citizens (regardless of their location), the associated risks and the apolitical nature of online voting implementation. The aim of the broad parliamentary debates is to discuss **the whole range of questions related to the implementation of internet voting**, including ideological issues, compliance of the new system with generally accepted electoral principles, technological issues, and cyber security.
 - **Organising public consultations, on the Parliament's platform, concerning the compatibility of the proposed online voting concept** with the most important electoral principles stipulated in the Council of Europe's recommendations on e-voting standards of 2004 and updated in 2017 - reliable identification of voters, possibility to confirm the vote before and after voting, ensuring anonymity and secrecy of the vote, developing a user-friendly and accessible technical solution, ensuring full transparency of all aspects of online voting, certification and independent testing of the proposed system. In this respect, the Republic of Moldova could take over some best practices from Estonia's experience. The Estonian Parliament has had 3 deliberations on this topic: adoption of the concept of online voting (2002), detailed specifications about online voting (2005, shortly before the first elections held with the opportunity to vote online, the 2005 local elections) and further, more

nuanced technical changes following experiences with online voting after 5 elections using this voting method (2012).

Parliament to adopt a decision allowing elections to be organised using e-voting, if all compliance and security aspects are ensured, including through the decision on the possibility of organising advance internet voting for a longer period than the legislation provides for today (only one day on election day).

4. Continuous increase of secure digital identification capabilities and the number of users of digital authentication mechanisms.

- Online voting needs to be considered in the context of eGovernment mechanisms, while **secure digital identification is the key interface for ensuring the functionality of the online voting ecosystem**. Without a secure, widespread, accessible, easy to obtain and extendable digital ID with extended validity, the use and penetration rate of online voting will remain marginal.
- In the Republic of Moldova, electronic and holographic signatures have the same legal power, but even if this is clearly regulated, the level of acceptance of digitally signed documents remains limited, especially in rural areas. Currently, there are 3 active ways of digital authentication: the mobile signature issued by 2 telecommunication companies (Orange and Moldcell), the mobile signature issued by the Information Technology and Cyber Security Service (ITCSS) and the electronic identity card issued by the Agency for Public Services (APS), which allows users to authenticate using 2-step credentials: personal identification number and password. The digital signature certificate is not mandatory in the Republic of Moldova, **which creates a limited possibility for the widespread implementation of digital services and thus online voting**. Many holders of digital certificates use them only occasionally, being obliged to use them by several regulations (civil servants, accountants, etc.). The limited validity period of certificates and authentication credentials, bureaucratic procedures for applying for new certificates or renewing existing ones, are other barriers to their mass use.
- Recently, representatives of the Moldovan Government announced the development of a new digital authentication system, which will work through a mobile phone application, similar to the Smart ID solution used in Estonia. It should be noted that although the Estonian Smart ID app has passed all security tests, the Estonian authorities have decided that this solution will not be used in the 2021 local elections, as previously announced. The reason given recently is that the solution is the product of a private company, unlike ID cards or Mobile ID, which are issued by state institutions (in the case of Mobile ID, digital signature certificates are issued by the Police and Border Department). In order to make it possible to use the new Smart ID solution developed in the Republic of Moldova as part of the e-voting, **digital signature certificates must have the highest possible level of security (qualified advanced electronic signature)**.
- Despite the fact that many digital services have been developed, **the use of digital solutions in Moldova remains relatively limited**. In this regard, **it is crucial to increase the number of citizens using digital authentication mechanisms and online services** in order to increase the general confidence in the country's digital transformation processes and, therefore, the possibility of implementing the e-voting.
- The recent changes in the Government structure, involving the appointment of a Deputy Prime Minister responsible for digitalisation, as well as legislative changes in the Parliament and recent Government decisions that imply a wider use of digital services, are an important step towards securing the digital identification process. However, a much **more consistent information and capacity building campaign on the use of digital services is needed**, especially in rural areas.

5. Development, pre-testing and updating the technical, operational and security functionalities of the internet voting solution after the testing phase.

- **Implementation of the technical solution for internet voting by a large group of electoral specialists and technical implementers**, in a transparent manner, with the possibility of national and international decision-making and technical audit at each stage of its development. The solution will take into account all **functional practices and failed attempts of online voting**, ensuring all necessary elements of transparency of the online voting process, including the **possibility of verification of the voting option by the voter** and ensuring full auditing at any stage of online voting. In this respect, the biggest challenges will be related to secure identification and authentication of citizens within the online voting solution, as mechanisms based on simple access passwords or authentication certificates sent by mail are insufficiently secure. Another challenge will be to guarantee the secrecy of the vote and the encryption mechanisms used for this purpose. The Estonian system uses asymmetric encryption methods, with public access keys for encryption at the time of voting and private access keys, used for opening and decrypting votes after election day, used only by a group of election officials and specialists. After all challenges are completed, the private access keys are destroyed.
- In the development of the technical solution, it is fundamental that the **proposed solution is very simple to use**, with clear intuitive steps for users and maximum possible transparency of all development processes. The solution should be **pre-tested by independent expert groups** to highlight possible malfunctions or security breaches at all stages of voter authentication, voting, obtaining vote confirmation, vote decryption, vote counting and final vote tabulation.

6. Testing the technical solution in simulated or trial elections.

- **Test the technical solution on a representative sample of citizens** to highlight all technical elements related to the functioning of the internet voting solution and propose potential elements to be improved. For example, it can be used in repeated elections in one or more town halls, in districts of a city, or in parallel, with regular paper ballot voting. A similar track was followed in the development of the Estonian technical solution (developed by a local IT company), with a trial election organised in the city of Tallinn in January 2005. The system worked flawlessly and, as a result, it was introduced as a voting method in the local elections in autumn of the same year, and 1.9% of voters opted for this way of voting.
- In addition to this effort, the **solution can also be tested in other ecosystems**: voting in professional associations, consultative voting in some town halls, consultative voting in private companies, universities, political party congresses. In order to demonstrate the functionality of the system, but also to send a clear message of endorsing it, the Government and the Parliament of the Republic of Moldova can organise some meetings or sessions to use this system.
- **Multiple testing of the proposed solution**, assuming it works without any major incidents or issues affecting the final outcome, can also help increase confidence in the solution itself and in its developers, including election officials.

7. The piloting of the internet voting for local elections in 2023 and preparation for the full introduction of the internet voting for the 2024 presidential and 2025 parliamentary elections.

- Given that the citizens of the diaspora do not participate in local elections, the organisation of local elections in 2023 with the possibility of internet voting only within the territory of the Republic of Moldova will provide **a more secure and credible platform for the organisation of the first legally binding elections using online voting**. It is very important to keep the possibility of cancelling the online voting if the citizen wants to vote in person with the ballot paper on the election day, to have the possibility of online voting for a longer period (at least 3 days), to have the possibility of repeated online voting with only the last vote remaining valid and to have a sufficiently long period (a few days) between the possibility of online voting and the election day. Thus, if uncertain situations arise, the authorities should have sufficient time to remedy the existing problems or invite citizens who have voted online to vote in the traditional way, if it is impossible to solve them.

- Following the limited introduction of online voting, potential dysfunctions will be removed after the local elections, so that for the presidential (2024) and parliamentary (2025) elections, the solution can be fully offered including to the Moldovans living abroad.

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