

***Legal requirements for successful electronic voting
in Algeria- challenges and security measures-***

متطلبات انجاح الانتخاب الالكتروني في الجزائر – تحديات وسبل حماية -



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Abstract:

Countries on the path of growth, similar to the Algerian state, are seeking to gradually introduce digital programs into their administration, whether central or local, and move away from traditional administration, which was actually embodied through the development of the Electronic Algeria project for the year 2013.

Considering that the election is the most prominent legal mechanism in activating and embodying the features of the state of law, the new vision of the government is to shift towards an electronic election system, in the future, which is embodied by some countries in their legislation, perhaps the most prominent of which is the state of Estonia, which considers the Internet a human right, and therefore election is a consequence of that. It is considered an ordinary thing and even achieved great success in this field.

In the face of all this disparity, the electronic election for the Algerian government is a real challenge in terms of electoral benefits by setting the legislative and regulatory framework for this type of elections, as well as striving towards finding mechanisms and effective programs to protect the system from penetration and fraud to reach the desired goal, which is electronic elections that are more fair, transparent and credible.

Keywords: electronic elections system, the legislative framework for the electronic elections system, legal protection mechanisms.

الملخص

تسعى الدول السائرة في طريق النمو على غرار الدولة الجزائرية إلى إدخال البرامج الرقمية تدريجيا في إدارتها سواء المركزية أو المحلية والابتعاد عن الإدارة التقليدية وهو ما تم تجسيده فعليا من خلال وضع مشروع الجزائر الالكترونية لسنة 2013.

وباعتبار الانتخاب أبرز الآليات القانونية في تفعيل وتجسيد معالم دولة القانون، فإن الرؤية الجديدة للحكومة هو التحول نحو نظام الانتخابات الالكترونية في المستقبل، وهو الأمر الذي جسده بعض الدول في تشريعاتها لعل أبرزها دولة استونيا التي تعتبر الانترنت حقا من حقوق الإنسان، وبالتالي فالانتخاب نتيجة لذلك يعتبر شيئا عاديا بل

وحققت نجاحا باهرا في هذا المجال.

أمام كل هذا التباين، يعتبر الانتخاب الالكتروني بالنسبة للحكومة الجزائرية تحديا حقيقيا في الاستحقاقات الانتخابية من خلال وضع الإطار التشريعي والتنظيمي لهذا النوع من الانتخابات وكذلك السعي نحو إيجاد آليات وبرامج فعالة لحماية النظام من الاختراق والتزوير للوصول إلى الهدف المنشود وهي انتخابات الكترونية أكثر نزاهة وشفافية ومصداقية.

الكلمات المفتاحية: نظام الانتخابات الالكترونية، الإطار التشريعي لنظام الانتخابات الالكترونية ، آليات الحماية القانونية.

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Introduction:

Elections, as one of the most important political rights, are a mechanism of democracy based on the principle that power belongs to the people, who are the source of all authority. Elections have gradually evolved from their initial form of direct voting, as practiced in some Greek city-states with small populations, to the traditional method of voting via ballot boxes.

In light of recent developments and the entry of many countries into the digital age, there has been a shift from paper-based administration to electronic governance, implemented by various nations to differing extents. Some have adopted it across all sectors, while others have limited its application to specific strategic sectors.

Developed countries have been at the forefront of implementing electronic voting systems, moving away from traditional voting methods. Notable examples include Estonia and Finland, as well as several Arab countries such as Iraq and the Kingdom of Bahrain. When examining experiences from these countries, we find that some have been successful, while others have encountered challenges and failures.

In light of these considerations, Algeria faces a significant challenge in implementing electronic governance following its entry into the digital realm through the "Algeria Electronic" project launched in 2013, which has been activated across 13 sectors. This challenge is particularly pertinent for upcoming elections and referenda, necessitating the establishment of a legislative and regulatory framework for the electronic voting system that will be realized in the future.

Furthermore, it is essential to develop protective mechanisms, whether legal or institutional. One of the most significant issues faced by countries adopting this

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technology is the risk of interference and manipulation of the electoral process by powerful nations that claim to promote democracy and protect human rights. The underlying goal of such interference often aims to undermine the stability of these countries and intrude upon their internal affairs.

Therefore, while the importance of electronic elections lies in enhancing the credibility and transparency of the electoral process—objectives pursued by the majority of nations—it is imperative that effective protective measures are established to prevent the issues encountered by some early adopters of electronic voting.

Based on this context, the following issue arises: To what extent is the Algerian state striving to transition to an electronic voting system? What challenges does it face in establishing legislative and institutional mechanisms to protect this system?

To address this issue, our study employs both descriptive and comparative methodologies, dividing the topic of this research paper into two sections. In the first section, we examine the legislative framework for the electronic voting system, while the second section is dedicated to exploring the legal and institutional protective mechanisms for this system.

Ultimately, we aim to draw a series of conclusions and recommendations that we consider essential to advance this topic.

First topic: The Legislative Framework of the Electronic Voting System

The experiences of some leading countries that have embraced technological advancements and incorporated digitization into their legislative systems have achieved their desired goal of a paperless administration across various aspects of life, including elections. While elections are considered a means and manifestation of democracy, some countries have shifted from traditional voting methods to a gradual transition toward electronic voting, utilizing information technology programs. Notable examples of countries that have implemented this concept include Estonia in Europe, as well as several Arab countries, including the Kingdom of Bahrain, Iraq, and Egypt.

First requirement: Concept of the Electronic Voting System

The term "electronic voting" is among the modern terminologies that emerged with the advent of e-governance, often referred to as "electronic democracy" or "electronic ballot." Among these various designations, Algeria is

recognized as one of the countries that has embraced digitization through its "Algeria E-Government" initiative, which encompasses thirteen pillars¹.

The electoral process involves several stages, starting from the announcement of the elections through a presidential decree and the summoning of the electoral body, followed by voter registration, data updates, announcement of nominations, election campaigning, voting, vote counting, and the announcement of results.²

It can be inferred from the distinctions among these three terms that electronic democracy is broader in scope than the electronic voting system, as voting serves as a means of expressing democracy. Conversely, the electronic voting system encompasses a broader range than electronic balloting, as the latter refers only to the act of voting without encompassing other critical stages such as vote counting and results issuance.

Algeria faces a significant challenge in implementing an electronic voting system in the upcoming elections, as stipulated by the Independent National Authority for Elections in a statement made by its president, Mohamed Sharfi.³

Section One: Definition and Importance of the Electronic Voting System

Technology and information technologies play a crucial role in enabling citizens to cast their votes from home, at work, or any location. Elections are no longer limited to physically visiting polling centers to cast votes on traditional paper ballots placed in designated boxes. The experiences of many countries have demonstrated that citizens can exercise their right to vote electronically through various simple and accessible methods, reflecting the advancement of our contemporary world and the integration of electronic technologies into all its facets. This has provided electoral administrations with various systems to choose from based on their needs and the types of elections to be conducted, as well as the prevailing political, economic, and social conditions within those countries.⁴

Electronic voting refers to the use of information technology at different stages of the electoral process, including voter and candidate data registration, voter

¹- See Presidential Decree No. 12/415 ratifying the African Charter on the Values and Principles of Public Service and Administration adopted in Addis Ababa, dated 12/11/2012.

²- See Organic Law No. 21/01 on Elections, dated 03/10/2021, Official Gazette No. 38, issued on 05/11/2021.

³ -Refer to the statement by the Independent National Authority for Elections.

⁴- Amin Mohamed Mostafa, electoral Crimes, New University Publishing House, Alexandria, 2000, p. 25.

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identity verification, electronic voting procedures, and finally, electronic vote counting and tallying.

Under a comprehensive electoral system, all these procedures are carried out without resorting to traditional methods. Electronic voter registration through databases is the first step in any electoral system that seeks to incorporate technology. However, simply entering voter data electronically does not necessarily mean that electronic voting can be immediately adopted, as implementing electronic voting requires parallel modifications in several areas, some of which may extend beyond the electoral administration itself.¹

Electronic Voting is utilized in some of the largest democratic systems in the world, with online voting implemented in certain countries. Initially, it was limited to smaller nations without a history of conflict. Currently, many countries are considering adopting electronic voting systems to enhance various aspects of the electoral framework and electoral processes.²

Regarding the legislative framework, it is noteworthy that the majority of Arab constitutions do not provide for electronic voting; rather, they are governed by traditional constitutional texts. This is exemplified by the Algerian legislator, who regulated the right to vote in Article 56 of the constitutional amendment of 2020.³

Among the Arab countries that have adopted the electronic voting system is Iraq. According to a statement from the Iraqi Electoral Commission, the participation rate in the Iraqi elections reached 44.52%, with approximately 10 million and 980 voters participating out of 24 million eligible voters, including those voting from abroad.⁴

Another Arab country that has implemented an electronic voting system is Bahrain. The Bahrain Electronic Voting Forum defines this system as the exercise of political rights in elections and the selection of candidates through the use of information technology, instead of traditional methods such as paper ballots and ballot boxes. The results are then stored in computer systems according to specific technical and security standards to achieve the highest

¹- Al-Muḥaqqiq al-Ḥillī Journal of Legal and Political Sciences, Issue 4, Year 7, 2015, p. 452-453.

²- International IDEA, introduction to Electronic Voting: Essential Considerations, Policy Paper, December 2011, p. 6.

³- See Article 56 of Presidential Decree No. 20/442 on constitutional amendment, dated 11/01/2020, Official Gazette No. 82, issued on 12/30/2020.

⁴- Refer to the statement by the Iraqi Electoral Commission.

levels of transparency, accuracy, and security, ensuring the integrity of the electronic voting process.¹

It is worth noting that Algeria has adopted an electronic voting system to a limited extent during the partial renewal of the Senate members and elections for the Bar Association, without the existence of legal texts, which raises concerns about one of the most important guarantees: the principle of legality.

Section Two: Importance of Electronic Voting

E-governance has played a significant role in bringing the administration closer to citizens, enhancing its quality and effectiveness. Information and communication technologies are vital across all fields—political, economic, and social. One of the main challenges is the implementation of an electronic voting system in upcoming elections, whether presidential, legislative, or local. Given these challenges, digitizing the electoral system holds paramount importance.

Firstly: Political Importance of the Electronic Voting System

Introducing digitization into the electoral system is of great significance, especially with the availability of legal and institutional mechanisms. The Independent National Authority for Elections is an independent body, both administratively and financially, possessing extensive powers in this area. The introduction of modern technical means indicates the potential success of the electoral process, provided there are protective programs against system breaches and election result fraud. This was highlighted in a statement from the aforementioned authority, which had initially been hesitant about adopting this system but has currently adopted it, albeit on a limited basis for the partial renewal of the Senate members.

Digitization is a crucial tool for combating administrative corruption, leading to the eradication of bribery, favoritism, and nepotism. In an environment of transparency, a spirit of democracy flourishes, contributing to the development of the relationship between candidates and voters.

However, it should be noted that digitizing the electoral system will not achieve its intended goals without protective measures for the electoral program. Algeria is among the countries that have included provisions in their criminal policies to establish legal texts for the protection of electronic programs and activate institutional mechanisms to achieve the political objective of a more transparent, credible, and fair electronic voting system.

¹-Statement by the Bahrain Forum for Electronic Voting.

Secondly: Economic Importance of the Electronic Voting System

The implementation of an electronic voting system contributes to enhancing efficiency, reducing costs, and rationalizing expenditures, as well as protecting public funds. Although the application of e-governance and the activation of the electronic voting system in the future requires financial resources, adopting this type of system can lead to significant budget savings by decreasing the need for paper ballots and the human resources necessary to ensure the success of the electoral process.

In conclusion, despite the advantages of e-governance, particularly the electronic voting system in terms of transparency and the rationalization of public expenditures, one of the main challenges faced by developing countries, especially the Algerian government, is the potential vulnerability of the information system. Therefore, it is essential to establish protective programs against all forms of breaches and fraud to ensure the success of this electronic voting system.¹

Second requirement: Challenges and Requirements of the Electronic Voting System

The digital transformation that countries aim to implement across various sectors-political, economic, and social-through e-governance projects, seeks to make elections of all types electronic, in line with the global changes taking place.

The implementation of e-government projects and the digitization of the electoral system has resulted in numerous challenges, notably legal and financial obstacles that need to be addressed gradually.

E-government, which includes the electronic voting system, requires several prerequisites to protect electoral processes from result fraud. Among the most important of these requirements are technical and technological necessities, as well as economic, financial, and legal prerequisites to ensure the effectiveness of state policies in the realm of e-governance.

Section One: Challenges of the Electronic Voting System

Governments wishing to transition to e-governance and realize the concept of electronic voting face a range of challenges that necessitate thorough examination and scrutiny, given the positive and negative impacts these

¹-Omar Moussa Jaafar Al-Quraishi, the Impact of E-Government on Reducing Administrative Corruption, Al-Halabi Legal Publications, Beirut, Lebanon, 2015, p. 71.

challenges may have on the implementation of e-government programs dedicated to serving individuals.¹

Thus, these governments must identify the barriers that obstruct the execution of e-governance and propose solutions that ensure the implementation of e-government programs. The significance and scale of any project, along with its transformative scope and the range of services it offers, dictate the magnitude of the challenges encountered. Smaller projects typically face minor challenges, while larger projects encounter more substantial obstacles. Given the vast scale of the e-government initiative, it is clear that its challenges are significant, and the same applies to the electronic voting system.²

Firstly: Legal Challenges of the Electronic Voting System

The successful implementation of an electronic government system, including the electronic voting system as an integral part of the e-government project, faces significant legal challenges. These challenges include a substantial legislative gap and resistance to the transition to a digital system. Consequently, accessing various services and benefits derived from e-government necessitates the establishment of specialized legal frameworks.³

One of the most critical issues is information security, which poses significant obstacles and challenges for both e-government and electronic voting systems. The myriad risks associated with internet applications—such as viruses, breaches, and deliberate sabotage—have led to a lack of trust among users. This distrust results in hesitance to provide personal information, potentially enabling the falsification of election results through electronic means. To build confidence in these projects, it is essential to invest in information security measures that match the scale of the project. Thus, this aspect must be prioritized during the implementation of the e-government project.⁴

Secondly: Economic and Financial Challenges of the Electronic Voting System

The realization of the electronic voting system as a strategic vision for the Algerian government in upcoming elections—whether presidential, legislative, or local—requires relatively significant financial resources. This necessity arises

¹ -Ibid, p. 78.

² - Ibid, p. 71.

³ - Safia bint Abdullah Ahmed Bakhit, quality Control and Standards of E-Government Performance, research paper presented at the Information Security and E-Government Conferences, Arab Administrative Development Organization, 2010, p. 148.

⁴ -Yahya Balbair, administrative Corruption and the Absence of Transparency and Information Security: Challenges Facing E-Government, Digital Journal, Issue 12, p. 23.

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from the need for substantial infrastructure and investments, which may take years to develop and incur additional costs. Implementing an electronic voting system is not as straightforward as some may believe; it requires genuine political will and funding aligned with Algeria's strategy for rationalizing expenditures. Although electronic voting can represent a true breakthrough in reducing public spending from an economic perspective, it still necessitates funding for its practical realization.

To overcome these financial challenges, it is essential to recognize the significant benefits that e-government, particularly in the area of electronic voting, can offer in the future. These benefits include reforming the electoral administration and combating corruption, which undermines the integrity and transparency of the electoral process, while also facilitating data availability and simplifying procedures.

Section Two: Requirements of the Electronic Voting System

To implement the electronic voting system in Algeria for the upcoming elections, several requirements must be met to achieve better electoral outcomes compared to traditional voting. Among these requirements are technological, economic, and financial needs, with a crucial requirement being the establishment of a legal framework regulating electronic elections.

Firstly: Technological Requirements for Implementing the Electronic Voting System

There are numerous technological requirements necessary for transitioning to e-government and implementing an electronic voting system. From a technical perspective, it is evident that the state possesses a vast amount of information and data, with each ministry or agency holding extensive information, programs, and services for individuals. This necessitates the creation of an internet portal that allows individuals to easily access all official departments. This portal should serve as a website encompassing everything the government intends to provide to its citizens, following a policy that specifies all documents, information, and government forms available online.¹

From a technological standpoint, those responsible for the e-government project must utilize the latest information and communication technologies. It is vital to focus on establishing appropriate infrastructure and strategies capable of building interconnected communities. This involves creating an interactive

¹- Omar Moussa Jaafar Al-Quraishi, op. cit., p. 71.

online platform that facilitates communication between government agencies, individuals, and service providers, ensuring direct availability of information regarding any process.¹

Thus, it is crucial for a government wishing to transition from traditional governance to e-governance and to implement an electronic voting system to meet this requirement. The government must provide necessary information to its citizens via the internet and establish a policy for the direct online availability of all documents, information, and government forms.

In this context, a significant issue arises concerning documentation within government agencies. Without an effective documentation system to place all administrative work documents in their correct context promptly, any genuine progress must address existing issues in the electronic realm before moving toward e-governance and successfully transitioning to an electronic voting system.²

In conclusion, countries that effectively manage information and communication technologies tend to be more prosperous and advanced. Control over technology serves as a crucial criterion for classifying a nation as developed or developing. The success of these countries in mastering technologies will undoubtedly lead to the success of their electronic voting systems, as evidenced by Estonia. In contrast, other nations that face shortcomings and cannot effectively control technology may encounter numerous problems when implementing electronic voting systems, which can create vulnerabilities that allow for external interference from more advanced nations.

Secondly: Economic and Financial Requirements for Implementing the Electronic Voting System

These requirements pertain to funding methods, cost-reduction strategies, and the accounting and administrative model of the project. Strengths in funding possibilities can arise from external sources, while weaknesses include the lack of investors and restrictions on budgets. Conversely, there are opportunities for reducing government performance costs, which can encourage greater participation. However, risks include administrative and financial corruption within the administrative unit.³

¹-Ibrahim Al-Faraj, the Impact of Internet Expansion on E-Government Projects*, paper presented at the E-Government Symposium, p. 21.

²- Omar Moussa Jaafar Al-Quraishi, op. cit., p. 80.

³ -Ibid, p. 80.

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Economic and financial requirements are among the key factors that can hinder or delay e-government projects. Thus, it is essential to assess the return on investment and costs associated with e-government initiatives. An analysis of both strengths and weaknesses related to these economic and financial requirements is necessary to determine how to overcome these challenges and ensure successful financial planning for e-government projects.¹

The digital transformation of e-government and the implementation of the electronic voting system require substantial funding, ranging from the establishment of information banks to the development of network infrastructure, as well as the retraining of personnel. All these efforts would be futile if the society does not transition into an information-based community. Therefore, many countries around the world have yet to convert their governments into electronic ones, still awaiting the results of experiences from other nations that have rapidly transitioned to e-governance, as well as the gradual transformation of society into a digital one.²

Thirdly: Legal Requirements for Implementing the Electronic Voting System

Law represents a set of rules that govern and organize the relationships among individuals within society, delineating each person's behavior and legal standing in relation to others. It aims to balance conflicting interests, establishing rights for individuals while imposing corresponding obligations, thereby preventing conflicts between rights and duties and identifying what deserves legal protection, thus ensuring stability, freedom, and equality.³

Law serves as a powerful means of social regulation, essential for the functioning of society and the stability of its systems. Without law, it is inconceivable to maintain a system governing individual behavior and protecting interpersonal relationships.

Although existing laws have been integrated into the framework of e-government, there is a need for new legislation to address the novel frameworks governing individual interactions. For example, current laws regulate social, economic, and political transactions that individuals engage in while accessing services through e-government systems; however, these laws may not be

¹- Ibid, p. 80.

²- Sami Mohamed Sidqi, cost-Benefit Analysis of E-Government Projects, paper presented at the E-Government Symposium, Reality and Challenges, Muscat, 2003, p. 24.

³ - Mohamed Said Jaafer, introduction to Legal Sciences, Part Two: Lessons in the Theory of Rights, First Edition, Homa Printing, Publishing, and Distribution, Algeria, 2011, p. 24.

sufficient to manage new transactions arising from the ability to obtain services digitally.¹

Accessing the digital realm necessitates legal frameworks that facilitate the establishment of e-government and ensure it is a project embraced by all stakeholders, with a common direction that encourages all groups to engage in this digital system.²

In conclusion, the requirements for implementing the electronic voting system must encompass technological, economic, and legal aspects, as these represent critical legislative guarantees to protect the electoral process in its electronic form. This approach is essential to ensure information security for both voters and candidates, safeguarding against any breaches or fraud.

The second topic: Legal and Institutional Protection Mechanisms for the Electronic Voting System

The technological advancement across various fields, including economic, social, and political domains, is a positive development in the life of societies. Electronic voting is one of the most significant advantages of digital transformation. However, this shift also brings various challenges, notably the lack of legislative frameworks governing electronic voting in many countries, including Algeria. It is essential for lawmakers to establish a legal framework and create institutional mechanisms to ensure that elections achieve their primary goal: earning voters' trust in this electoral process.

The electoral process is complex, involving many stakeholders, including winners and losers in every election. Consequently, the stakes are high, and there are numerous temptations to secure victory, even through illegal or unethical means. This may involve manipulating results to pre-determine winners or losers, or attempting to influence the elections, which can undermine the legitimacy of the entire process. Therefore, elections lacking integrity cannot be considered fair or just.

The Algerian legislator, similar to other comparative legal systems, has established legal protection mechanisms in the Constitution, the Organic Law on Elections, and various penal laws, including the Penal Code and its supplementary laws. Additionally, some bodies and institutions have been created to safeguard the electoral system and process from any threats to its credibility and transparency.

¹ -Omar Moussa Jaafar Al-Quraishi, op. cit., p. 84.

² - Salwa Ali Salem, law and Social Control, First Edition, Wahba Library, Cairo, 1985, p. 77.

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Electoral crime remains a significant issue for many countries, particularly newly democratic nations like Algeria, which embraced democracy and pluralism explicitly in its 1989 Constitution.¹

This leads to the question: Are the legal and institutional protection mechanisms sufficient to safeguard the electronic voting system in the future when implemented in Algeria?

First requirement: Legal Protection Mechanisms for the Electronic Voting System

Legal norms do not arise from nothing; they are derived from material sources that provide their content. These sources have official authority and obligatory force as norms governing aspects of life. Material sources can vary and may include natural, political, social, moral, religious, or economic factors.² Given the flexibility characteristic of law, it can be amended or repealed according to societal developments. E-government is one of the most significant of these advancements, particularly regarding the future implementation of an electronic voting system.

Legal norms have diverse sources; ancient societies applied customary law, while modern societies primarily rely on legislation in its broadest sense, which has become the dominant form of regulation in our time.³

Numerous legal texts emphasize the protection of the electoral system, with the Constitution being the highest authority, followed by the Organic Law on Elections and other penal laws such as the Penal Code and its supplementary regulations.

Section one: Legal Protection of the Electronic Voting System in the Constitution and Organic Election Law

As the supreme legal document of the state, the Constitution defines the mode of exercising political power, establishes the basic political institutions,

¹- Issam Hawadeq, the Independent National Authority for Elections as a Legal Guarantee for the Integrity of the Electoral Process, *Journal of Humanities*, Vol. 31, Issue 4, 2020, p. 431.

²-Mohamed Saleh bin Shaaban, the Political Parties System and the Algerian Experience in Political Pluralism, Ph.D. Thesis in Law, Faculty of Law, University of Constantine 1, 2014, p. 133.

³-Amar Boudiaf, introduction to Legal Sciences: General Theory of Law and Its Applications in Algerian Legislation, Fourth Edition, Distribution Publishing House, Al-Muhammadiya, Algeria, 2014, p. 128.

and sets forth the rules governing their operations and the relationship between these institutions and the citizens.¹

Referring to Article 56 of the 2020 Constitutional Amendment, we find that the right to vote and run for office is a constitutional right and one of the most important political rights². From our conclusions, it can be said that the constitutional framers have granted and therefore protected this right. Traditional elections, in their current form, are protected, meaning that the right to vote is safeguarded. However, the legal issue lies in the fact that there are no explicit legal provisions concerning the modern form of electronic elections, creating a legislative gap that needs to be addressed. Algeria has already embarked on the digitization of various sectors and is gradually shifting towards adopting technology in all fields. Consequently, enacting legal provisions to protect the electronic voting system has become an urgent necessity. The existing laws provide general protections, but the process of digitizing elections requires specific legal texts.

Among the laws that have provided protection for the electoral system, we find certain articles stipulated in the Organic Law on Elections, Ordinance No. 21/01. By referring to the provisions of Article 276 (31) and subsequent articles, the eighth chapter of this law stipulates criminal penalties for any act that undermines the electoral system and process at various stages. The penal sanctions outlined in the aforementioned law include primary penalties such as imprisonment, and financial penalties in the form of fines within specified minimum and maximum limits as determined by the legislator, leaving discretionary power to the judge within these limits to achieve the purpose of criminal law, which is the realization of criminal justice in its modern sense.

Analysing the aforementioned article, we find that the constitutional legislator emphasized providing greater independence to the Independent Election Authority, considering it a fundamental partner and contributor to the success of this type of election in the future, serving as one of the main guarantees for the credibility and transparency of the electoral process from the initial phase as a supervisory body for electoral lists to the announcement of the election results.

¹ - Hamza Khashab, introduction to Legal Sciences and the Theory of Rights*, First Edition, Balqis Publishing House, Bab El Zouar, Algeria, p. 69.

²-Mouloud Mansour, research in Constitutional Law, Author's Publishing House, Algeria, 2010, p. 15.

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Further, upon examining Article 283 ¹of the Organic Law on Elections, we perceive a reflection of a forward-looking vision where Algeria is among the countries that will implement an electronic voting system in the near future.

The term “punishable acts affecting the automated data processing systems related to the elections or attempting to affect them” in this article can be applied to any software program and the electronic voting system that will be implemented in the future. These data related to the electoral process are thus protected under the provisions of this article.

Section two: Legal Protection of the Electronic Voting System in the Penal Code and Complementary Laws

Crime has existed since humanity first appeared on Earth; it is a dangerous social and human phenomenon resulting from the interactions and conflicting interests between individuals. It has become a stable and familiar aspect of human nature and societal formation, to the point that its complete prevention is impossible. However, it can be relatively reduced by addressing its root causes through targeted policies aimed at preventing the development of criminal tendencies in individuals and treating the motivations for crime within their hearts and minds.²

Crime itself has evolved gradually from traditional crimes to more modern and sophisticated crimes. The world is currently experiencing a revolution in communication and information technologies, particularly with high-level computer systems and information-processing programs developed by major companies. Globalization, by breaking down geographical boundaries, facilitating the free movement of people, capital, and information, has further integrated legal and judicial systems. It has even extended its influence to the world of crime, making it easier to globalize criminal activity and methods, leading to the emergence of transnational crimes.³

The legal nature of criminal law is deterrent in character, and criminal law represents one of the strongest legal frameworks for maintaining societal order and ensuring public safety. It generally consists of two main components: the "element of duty," which includes the legal elements that constitute a crime, and the "penalty component," which specifies the type and extent of the punishment.

¹ -See Article 283 of the aforementioned Organic Law No. 21/01.

²-Nabila Razaki, summary of the General Theory of Criminal Punishment: Penalty and Security Measures, balqis Publishing House, Casablanca, Algeria, 2018, p. 5.

³ - Nabila Razaki, op. cit., p. 6.

Referring to Section 7 bis, entitled "Interference with Automated Data Processing Systems," particularly Articles 394 bis to 394 bis 8 of Law No. 06-23, which amends and supplements the Algerian Penal Code,¹ we find that certain provisions are directly applicable to the electronic voting system. For example, Article 394 bis of the Penal Code states that anyone who fraudulently enters data into all or part of an automated data processing system shall be subject to imprisonment and fines. When applied to the context of electronic voting systems, this provision indicates that any program or information system supporting constitutional and administrative institutions is legally protected under criminal law. This implies that the future electronic voting system, when implemented, will be protected, and it underscores the necessity for lawmakers to enact specific legal provisions related to electronic voting systems. These provisions should align with the principle of criminal legality, one of the key safeguards ensuring the proper conduct of the electoral process and maintaining its credibility by protecting it from any breaches or manipulation at any stage. However, one of the greatest challenges faced by developing countries, particularly those transitioning to electronic voting systems, is the difficulty in detecting breaches of the information system. Cybercriminals have the ability to manipulate data in ways that prevent detection, making such crimes "silent" by nature—crimes that leave no obvious traces. This represents a real issue for countries lacking the technological capabilities to monitor and control these systems.

In conclusion, we find that the legal protection provided by the Penal Code is effective at the national level but proves insufficient to offer comprehensive protection against external breaches of the electronic voting system. This is particularly difficult for countries without the technological capacity to control and monitor these systems as effectively as more advanced nations. A clear example of this is Iraq, where foreign hacking has compromised its electronic voting system.

Second requirement: Institutional Safeguards for the Electronic Voting System

The electoral process, in all its stages, requires the presence of institutions that ensure the integrity and credibility of the elections. There are core institutions dedicated to safeguarding the electoral process, notably the Independent Electoral Authority, established under Organic Law No. 19-07. In addition to this authority, other bodies are responsible for protecting the

¹ - See Articles 394 bis and subsequent articles of the Penal Code.

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electronic voting system that will be implemented in future political reforms, such as the National Authority for the Prevention of Crimes Related to Information and Communication Technologies, as well as the National Authority for the Protection of Personal Data.

Section one: The Role of the Independent Electoral Authority in Protecting the Electronic Voting System

Ensuring the integrity of the electoral process and safeguarding its stages from any irregularities or distortions requires, first and foremost, the presence of a neutral electoral administration that is impartial to all stakeholders—political parties, candidates, voters, and administrative bodies. The neutrality of the electoral administration significantly impacts the credibility and integrity of the entire electoral process, especially in emerging democracies. The more free and fair the elections are, devoid of fraud and manipulation, the greater the acceptance and satisfaction with their organization, enhancing citizens' trust and confidence in the results.¹

For this reason, democratic nations have been careful to establish an independent body, separate both organically and functionally from the executive power, to manage the electoral process and ensure protection at all stages, guaranteeing electoral fairness.

Based on this principle, Algeria, for the first time since independence, established the Independent National Electoral Authority as a model for independent electoral administration. This body is tasked with organizing, managing, and overseeing elections from the moment the voter registration is called until the preliminary results are announced. This is established by Organic Law No. 19-07, which stipulates in Article 2 that: "An Independent Electoral Authority is established to carry out its duties impartially. It enjoys legal personality and financial independence and is referred to in this text as the 'Independent Authority'"²

It is worth noting that the Algerian legislator did not provide a specific definition for the Electoral Authority, leaving this task to legal scholars. The International Institute for Democracy and Electoral Assistance defines electoral administration, based on the organic criterion, as "that institution or body legally

¹-Bilas Hashim Ahmed Mohammed, the Legal Regulation of the Independent Body in Managing Parliamentary Elections: An Analytical Study, Ph.D. Dissertation, Graduate Studies, World Islamic Sciences and Education University, Jordan, 2018, p. 51.

²-39. See Organic Law No. 19-07 dated 14 Muharram 1441 corresponding to 14 October 2019, relating to the National Independent Authority for Elections, Official Gazette No. 55. issued on 09/15/2019.

responsible for managing all or some of the core aspects of the electoral process and referenda in all its forms." ¹

From this, we conclude that the Independent Electoral Authority, as per the aforementioned Organic Law, is an independent body entrusted by the legislator with overseeing the entire electoral process. Therefore, it was necessary to grant it extensive powers to enable it to face the complex tasks required in the electoral process, from the convocation of the electoral body to the announcement of provisional election results. Additionally, its work requires the provision of a set of tools and methods to protect the electoral process from any violations that could compromise its integrity and transparency.²

When comparing this to Iraq's application of an electronic voting system, we find that it has established institutional mechanisms to protect the electoral process known as the Iraqi Electoral Commission, thereby setting clear guidelines on the matter. In Algeria, however, with the government's new approach to digitize all sectors, including elections and implementing them in their electronic form, the question arises: Will the Independent Electoral Authority maintain its traditional supervisory role over the elections, or will the legislator introduce new legal provisions while retaining the supervisory powers over the electronic voting system that will be established in the future for the same body?

Section two: The Role of Penal Institutions in Protecting the Electronic Voting System

It is well-known that crime, as a social phenomenon, cannot, under any circumstances, be completely eradicated or prevented. It is a social problem that harms the very fabric of any human society. As such, it serves as a destructive force for societal institutions and a hindrance to their development, well-being, and advancement. Consequently, a range of research studies and scientific interpretations have emerged in an effort to understand criminal phenomena and criminal behavior, identify the causes and motivations behind it, and simultaneously devise ways to mitigate its risks and explore preventive measures to the greatest extent possible.³

With the evolution of crime from traditional crimes committed through violence to more modern crimes carried out without violence, which only require a computer or any electronic means to breach information systems, one

¹-Kadour Zrifi, the Independent National Authority: Its Legal System, Tasks, and Organization, journal of Law and Political Sciences, Issue 13, 2020, p. 243,244.

²- Kadour Zrifi, op. cit., p. 244.

³- Nabila Razaki, op. cit., p. 138.

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of the greatest threats to the electronic voting system is hacking and fraud. Criminals may also use the information system itself as a tool to commit certain types of crimes.¹

However, the most significant danger associated with technology in elections arises when criminal organizations exploit the information network to facilitate the exchange of information within their networks, share their ideas and directions internally among their members, and even externally, in an attempt to recruit new members and obtain financial support from sympathizers in order to undermine the credibility of elections.²

Traditional institutions involved in combating crime, such as the judicial police, the public prosecution as the accusing body, and investigating judges who look into any criminal activity, play a key role in this process. Following the investigation, the case proceeds to the stage of judgment, which falls under the discretion of the trial judge, who has the authority to impose either mitigated or aggravated penalties. Additionally, the judge has the authority to impose supplementary penalties, whether mandatory or discretionary.

As for the protection of the electronic voting system, which is set to be implemented in Algeria for future elections, and which is gradually progressing as Algeria enters the digital age, Article 13 of Law No. 09-04, related to the prevention and fight against crimes related to information and communication technologies, has established an institutional mechanism responsible for safeguarding information systems. Since the future electronic voting system will be an information system, it is protected by this institutional mechanism called the *National Authority for the Prevention of Crimes Related to Information and Communication Technologies and Their Combating*.³

Referring to Presidential Decree No. 15-261 of October 8, 2015, which sets forth the composition, organization, and operational procedures of the *National Authority for the Prevention of Crimes Related to Information and Communication Technologies and Their Combating*, we can see the institutional framework put in place to protect the electronic voting system.⁴

¹-Abdelsalam Benslimane, op. cit, p. 38.

²- See Article 5 and subsequent articles of the aforementioned Penal Code.

³- See Article 13 of the law containing special rules for the prevention and combat of crimes related to information and communication technologies, dated 08/05/2009, Official Gazette No. 47, issued 08/16/2009.

⁴-See Presidential Decree No. 15/261 dated 10/08/2015 defining the composition, organization, and functioning of the National Commission for the Prevention and Combat of

Additionally, there exists an authority tasked primarily with protecting personal data, known as the *National Authority for the Protection of Personal Data*. This body was established under Article 22 of the same law, which stipulates: "An independent administrative authority is created to protect personal data, referred to hereafter as the National Authority, which shall have its headquarters in Algiers and shall enjoy legal personality, financial independence, and administrative autonomy."¹

In conclusion, we find that this authority plays a crucial role in the electoral process by protecting both voters and candidates. It ensures the credibility of the information related to the candidates, thus protecting voters from fraudulent or misleading data, while also safeguarding candidates' personal data from being mishandled outside the electoral process. The right to access accurate information to ensure the transparency of the elections is guaranteed under Article 55 of the 2020 Constitutional Amendment.²

Conclusion:

It can be concluded from this research paper that the implementation of the electronic voting system in upcoming elections—whether presidential, legislative, or local—has gradually begun, driven primarily by political will, especially with the implementation of the e-government project across 13 sectors. The issue of organizing electronic elections to achieve true democracy is just a matter of time. The system was activated during the partial renewal of the members of the Council of the Nation, but the main obstacle to this process is the lack of explicit and specific legal provisions to regulate this type of election, unlike countries with comparative legislation, such as Estonia, Finland, and Iraq.

Regarding the future implementation of the electronic voting system, several hypotheses are raised about whether it will be implemented across all stages of the electoral process, as done by the Independent Electoral Authority through the electronic registration of candidates and election officials, or whether it will be implemented in the most critical stages. Therefore, the most significant challenge to overcome is the creation of a legislative and organizational framework that embodies these elections and maintains their legitimacy, public trust, and ensures transparency and credibility in the electoral process.

Information and Communication Technology Crimes, Official Gazette No. 53, issued 10/08/2015.

¹- See Article 22 of Law No. 18/07 on the protection of natural persons in the processing of personal data, Official Gazette No. 34, issued 06/11/2018.

² - See Article 55 of the 2020 Constitutional Amendment.

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The main findings of this paper are as follows:

1. **Absence of Legal Provisions for Electronic Voting:** there are no specific legislative provisions governing and organizing electronic elections, which leads to the consequence that implementing this type of election without a legal framework could easily become a means for challenging the legitimacy of the elections.
2. **The Right to Vote:** the right to vote is one of the most important political rights enshrined in the constitutions of many countries worldwide. However, the digital transformation adopted by countries to varying degrees could undermine the integrity and accuracy of election results and lead to the election of individuals who are untrustworthy or lacking in competence, especially in developing countries that consume technology but lack the capacity to manage internal affairs independently.
3. **the Importance of Electronic Voting System:** the implementation of the electronic voting system is politically significant as it contributes to the development of democracy, particularly if effective protection programs are in place for this information system, along with the transparency and credibility of elections. Economically, it acts as a tool to protect public funds and rationalize expenses by reducing the quantity of paper used and the number of employees managing the election process.
4. **Real Problems Faced by Developing Countries:** one of the real issues faced by countries that cannot control technology is the lack of protective programs for information systems. The implementation of electronic voting in the future could lead to manipulation of election results by major powers, particularly those who use concepts of democracy, human rights, and globalization to interfere in the stability of these countries and influence their leadership choices, without the genuine participation of the people.
5. **Expected Challenges in Implementing the Electronic Voting System in Algeria:** there are expected challenges, especially regarding the economic and financial aspects of the process, as it will require significant financial investments and large-scale projects to turn this into reality. In addition, technical issues may arise, as has happened in other sectors, such as in the Ministry of Higher Education and Scientific Research.
6. **Difficulty in Detecting Breaches:** the difficulty in detecting breaches that may affect the electronic voting system in the future presents a challenge to the credibility of the elections.

Recommendations:

1. Legislative Framework for Electronic Voting: legislators must develop legal provisions to regulate the process of electronic voting in order to preserve the legitimacy of elections and avoid any legal issues.
2. Technological Protection for Information Systems: efforts should be made to develop stronger technical measures to protect the information system, especially when implementing the electronic voting system in the future.
3. Adopting Best Practices from Successful Countries: it is necessary to draw lessons from successful experiences in electronic elections, such as those of Estonia, Finland, and other pioneering countries, while avoiding the failed experiences of countries like Iraq.
4. Establishing Comprehensive Protection Programs: protection programs should be put in place to prevent any cyber-attacks or breaches on the electronic voting system. It is crucial to rely on the Algerian competencies that the country has to offer in order to safeguard this system.
5. Inclusive Participation for Success: all stakeholders, including civil society, should be involved in ensuring the success of the electoral process. The implementation of an electronic voting system in Algeria will require significant efforts, especially as it will be the first experience for the country with this type of election, with the goal of achieving results that meet the aspirations of both the people and the government.

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