

Received: December 2023 Accepted: January 2024

DOI: <https://doi.org/10.58262/ks.v12i2.331>

## The Legal System of Electronic Signature and its Authenticity in Proof

Qutaiba Nazar Jasim<sup>1</sup>, Emad Saleh Mohammed<sup>2</sup>, Majed Shehab Alramadan<sup>3</sup>, Jalal Jabbar Aleiwi Al-Majidi<sup>4</sup>, Ahmed Ibrahim Ahmed Attia Khalil<sup>5</sup>, Mohammed Ghaleb Waheed<sup>6</sup>, Dhafar Kamal Yaseen<sup>7</sup>, Ismael Jaber Dhahir<sup>8</sup>, Noor Layth Mahdi<sup>9</sup>, Mustafa Atiyah Ibrahim<sup>10</sup>, Hind Qasim Mohammed<sup>11</sup>

### Abstract

*Due to the great importance of signature in proof, the rules of proof in general do not accept customary documents unless they are signed. The unsigned documents are only accepted as a principle of proof in writing that requires other evidence. The court's acceptance of electronic contracting requires an authoritative acknowledgment of the electronic signature and its reliability as evidence in disputes. Evidence laws required, in addition to substantive conditions, formal conditions, as the signature on paper documents was limited to signature, stamp or fingerprint. This means that any other form has no effect. However, due to the importance of electronic transactions in our contemporary time, the growth of electronic commerce and the emergence of new concepts such as electronic government, the legislation of countries has organized the electronic signature and granted it authenticity in proof within objective conditions.*

**Keywords:** *Electronic Signature, Electronic Signature Authenticity, Electronic Document.*

### Introduction

The development in communication and information technologies has led to changes in many legal concepts such as the concept of writing, editor and signature. These technologies have created new forms of writing, editor and signature, all of which are distinguished by the electronic character. The electronic signature has appeared as an alternative to the traditional signature as one of the guarantees that verify the personality of the contractors. But, the acceptance of the electronic signature in electronic transactions as an argument in the evidence raised a great and wide controversy in jurisprudence and the judiciary, especially before the issuance of electronic transactions laws.

So, what is the electronic signature and the images it Take What is the authenticity of the electronic signature and the point of authentication on the electronic signature. The problem

---

<sup>1</sup> College of Law, Al-Esraa University, Baghdad, Iraq Email: [qtyba@esraa.edu.iq](mailto:qtyba@esraa.edu.iq)

<sup>2</sup> College of Law, Al-Esraa University, Baghdad, Iraq, Email: [emad.hamam@esraa.edu.iq](mailto:emad.hamam@esraa.edu.iq)

<sup>3</sup> College of Law, Al-Esraa University, Baghdad, Iraq, Email: [Majed@esraa.edu.iq](mailto:Majed@esraa.edu.iq)

<sup>4</sup> College of Law, Al-Esraa University, Baghdad, Iraq, Email: [jalal@esraa.edu.iq](mailto:jalal@esraa.edu.iq)

<sup>5</sup> College of Law, Al-Esraa University, Baghdad, Iraq, Email: [ismael.jaber1985@gmail.com](mailto:ismael.jaber1985@gmail.com)

<sup>6</sup> College of Law, Al-Esraa University, Baghdad, Iraq, Email: [ahmed.ibrahim@esraa.edu.iq](mailto:ahmed.ibrahim@esraa.edu.iq)

<sup>7</sup> College of Law, Al-Esraa University, Baghdad, Iraq, Email: [mohammed.ghaleeb@esraa.edu.iq](mailto:mohammed.ghaleeb@esraa.edu.iq)

<sup>8</sup> College of Law, Al-Esraa University, Baghdad, Iraq, Email: [noor.laith@esraa.edu.iq](mailto:noor.laith@esraa.edu.iq)

<sup>9</sup> College of Law, Al-Esraa University, Baghdad, Iraq, Email: [mustafa.atiyah@esraa.edu.iq](mailto:mustafa.atiyah@esraa.edu.iq)

<sup>10</sup> College of Law, Al-Esraa University, Baghdad, Iraq, Email: [Dhafar@esraa.edu.iq](mailto:Dhafar@esraa.edu.iq)

<sup>11</sup> Technical Engineering College, Middle Technical University, Baghdad, Iraq, Email: [Hind.qasim90@mtu.edu.iq](mailto:Hind.qasim90@mtu.edu.iq)

lies in the insufficiency of the texts that organized the work of these bodies and the extent of recognition granted to the electronic signature?

This is what we will discuss by dividing the study into two sections

### **The First Section: The Concept of Electronic Signature**

### **The Second Section: The Authenticity of the Electronic Signature**

#### **The First Section**

#### **The Concept of Electronic Signature**

The electronic signature appeared for the first time in the banking sector with the emergence of withdrawals and fulfillment by credit cards in banking transactions. The electronic signature imposed itself in light of the establishment and prosperity of electronic commerce, which prompted the legislator in many countries to establish the legal rules that join the electronic signature with the aim of solving Legal problems, which began to appear strongly in the field of proving electronic contracts; and to give confidence and protection to contractors, and keep pace with the wheel of technical development in the field of communications and information systems (E. Nassif. 2009).

In this section, we will talk about the electronic signature by defining it and clarifying its forms, by dividing it into two demands:

#### **The First Requirement**

#### **Definition of Electronic Signature**

According to the general rules, writing alone is not considered complete evidence of proof unless it is accompanied by a signature, which is the second element of the written evidence prepared for proof; because it is signature that attributes the writing to its owner and gives the customary editor its value in proof. Signature is the only condition for the validity of the customary paper (A. El-Feki. 2006).

Despite the distinguished position that the signature occupies with regard to recognizing the authenticity of the customary paper, and the consensus of jurists on considering it an essential element in this paper and being a complete proof of proof, it was not given a comprehensive definition preventing it by the majority of legislation in its texts, but rather explained its forms. This prompted jurisprudence to make an effort to define the signature. The signature was defined as a personal mark that

the signer puts in his name (in a fixed or special way) to confirm the validity of the content of the paper and the truth of what was written on it and his acknowledgment of taking responsibility for it (M. Al-Saeed Rushdi. 2002).

The electronic signature is an effective element in international and local transactions via the Internet, which has acquired a large share of local and international trade. This technology has begun to be used in many countries of the world. Thus, the definitions given to it by these countries differed according to their view to this term. There are those who know it by looking at the means by which it is done, and there are those who define it according to the functions and roles that it undertakes or according to its practical applications(A.Al-Rafi'i). For this, we will show the legislative definition of electronic signature, and then we will address the doctrinal definition:

### **First: The Legislative Definition of an Electronic Signature**

Some legislations have defined electronic signatures within their own separate law, as the Egyptian, Jordanian and Iraqi legislators.

The Egyptian legislator defined it as “what is placed on an electronic document and takes the form of letters, numbers, symbols, signs, or others, and has a unique character that allows identifying the person of the signer and distinguishes him from others”. (Article (2/c) of the Egyptian Electronic Signature Law).

The Jordanian legislator went in the Electronic Transactions Law No. (15) of 2015. Article (2) of it defines it as: “Data that take the form of letters, numbers, symbols, signs, or others and are included in electronic form or any other similar means in the electronic record, Or be added to it or linked to it with the aim of identifying the owner of the signature, and distinguishing him from others.

The Iraqi legislator also defined it as “a personal mark that takes the form of letters, numbers, symbols, signs, sounds, and has a unique character indicating its attribution to the position, and it is approved by the certification authority”. (Article (1) of the Electronic Signature and Electronic Transactions Law Iraqi the year 2012).

### **Second: Doctrinal Definition of Electronic Signature**

The definitions provided by jurisprudence regarding the concept of electronic signature are many and varied. They focus on one thing, which is not to deviate from defining the two functions of the signature: determining the identity of the signer, expressing his consent and adhering to the content of the document.

Some jurists defined it as: a person’s expression of his will to commit to a specific legal act, through his formation of secret symbols, known to him alone, that allow his identity to be determined (A. Saad. 2004).

Others argue that the electronic signature is a small digital file (a digital certificate) issued by one of the specialized and recognized authorities, governmental and international. The digital certificate stores the person’s information, the date and number of the certificate and its issuer. Two keys are delivered with this certificate, one public and the other private. The public key is the one that is published in the directory for all people, and the private key is the digital signature (M.Al-Kidwa. 2010).

Others consider that electronic signature: a set of procedures, or technical means that allow its use through symbols, numbers, or ciphers to produce a distinctive mark for the owner of the electronically transmitted message (H.Jami. 2000).

While others defined it as: a general technical term related to all methods that allows a person to sign an electronic document (M. al-Sharifat. 2005).

Based on the above, we see that the electronic signature is nothing but an electronic writing that takes the form of numbers, letters, symbols, signs, or others attributed to its signer and express its satisfaction with the content of the act signed on it.

Therefore, the electronic signature differs from the traditional written signature in terms of form. The traditional signature is the product of the movement of the signer’s hand, whether in the form of a signature, a thumb print, or through a paper physical medium. As for the electronic signature, it is through automated account devices, and any other electronic means is a set of procedures that are in the form of letters, numbers or code.

## **The Second Requirement**

### **Electronic Signature Forms**

The forms of the electronic signature vary according to the manner in which this signature is carried out. These forms differ among themselves in terms of the degree of trust and the level of the guarantee they provide, according to the procedures followed in issuing and securing them and the techniques they provide. There is no doubt that these technologies are in continuous development to respond to the changes arising from the amazing development in the field of information systems. Then, avoid any shortcomings in the systems of securing the use of the Internet in e-commerce, personal files and banking transactions. Also, working to prevent electronic fraud and creating a security system that guarantees the preservation of rights and reducing losses arising from hacking operations and electronic piracy. Accordingly, the electronic signature may take one of the following forms:

#### **First: The Digital Signature**

The digital signature is one of the most important forms of electronic signature due to its superior ability to accurately and distinctly identify the parties to the contract, in addition to its high degree of confidence and security in its use and application in contracts. The digital signature came through the idea of secret codes and symmetric and asymmetric keys (L. Obeidat. 2009). In order to make a digital signature, first, using logarithms. Then, the written editor must be converted from the normal writing style to a mathematical equation. After that, the signature must be converted into numbers. Secondly, in order to complete the editor to be legal, it is necessary to put a signature on it. This happens by adding numbers to the mathematical equation. Then, the editor is saved in the computer's memory, after which no one can return the editor to its readable form except the person who has the special equation for that, which is called the key (A. Tharwat. 2017).

The truth is that there are two types of keys: the first is a public key and the second is private. This is done according to a mechanism where the public key can be used by everyone and send messages on this key. While the private key is only known by the two parties of the contract. Therefore, each of the two parties of the equation can know the sender and the addressee if he uses his private key. This means that he can read the message and access it using the public and private keys. Since only the two parties to the contract know the private key, therefore this system achieves the highest levels of confidence and security for the editor and also ensures that its parties are accurately identified and distinguished. In addition, others are not allowed to access, tamper with, or modify the message (B. Doudin. 2009).

This type of signature is used in most electronic transactions, especially banking transactions, where the bank issues a card to the customer that contains a secret number, including credit cards, which enables the customer to enter his own account using the password that is specific to this customer alone and no one else has the right to know it. This type of signature is dealt with through two systems (On-line/off-line), which mean the direct line and the indirect line. Both are linked through the Internet. In the first system, the bank system records the transaction made by the customer on a magnetic tape, and he is allowed to carry out all his transactions; so that the device does not change the financial position and update the client's transactions until the end of working hours. As for the second system, it is based on updating the transactions made by the client directly, unlike the first system, which uses smart cards that save all operations in its memory (M. al-Matlaqa. 2006).

## **Second: Signature By Electronic Pen**

It is a method that depends on the use of a sensitive electronic pen that can write on the computer screen by using an information program that allows capturing the signature and verifying its authenticity. The instructions on the computer screen are followed by the user until a message appears on the screen asking him to write his signature using the electronic pen inside a box drawn on the screen. When the user signs on the screen with an electronic pen, the informational program measures certain characteristics of the signature in terms of size, shape, points, steps, torsion and other qualities. Then, the person presses certain keys that appear to him on the screen in order to agree or disagree to this signature. If the user clicks on the signature acceptance icon, the computer will collect the entire user's data, the signature statement, and the number of attempts. Then, it will encrypt this data and keep it in a way that allows it to be retrieved and used when necessary (A. Hegazy. 2007).

Although this type of signature may avoid some of the negatives that were directed at other types of electronic signatures for their ability to identify the person of the signer. And this comes through measuring the features of the signature and the extent to which it matches the original signature kept with the custodian. But it needs a computer that has it the possibility of linking with the reading device and the program that interprets the reading that takes place through the pen. In addition to that, the possibility of verifying the authenticity of the signature every time it is used. This method provides a kind of protection for electronic transactions concluded over the Internet (M. Muhammad.2006).

## **Third: Signing Using Magnetic Cards Associated with the Password**

Perhaps this form of signature in the most common electronic form of electronic signature is known to the general public. It does not require specific experience or much effort. Thus, this method allows the possibility of using it for every person. It does not require the person to own a computer of his own, or be a device connected to the Internet (B. Doudin.2009).

Banks and credit institutions have traditionally given their customers magnetic credit cards that have a secret number that only the card holder knows from customers.

These cards are used either to withdraw cash within the limits agreed upon between the customer and the bank under the card issuance contract and the customer's account, or to pay the value of purchases that the customer purchases from places that accept payment with this card. In order to complete any of them for the customer, he must enter the card in the correct position inside the device designated to carry out the operation, then he must enter his own password. Then, he presses the option to complete the operation. If the customer did not perform any of the previous three operations, he will not have any practical or legal effects (S. El-Sayed Qandil. 2006).

When the process is completed correctly through the ATM, and the customer obtains the amount he wanted in the withdrawal process, he will receive a paper tape in which the withdrawn amount, date, hour, amount withdrawn and the remaining balance. All of these procedures have replaced the traditional signature due to its distinctive features like security, trust and distinguishing the card holder who holds the secret number (L. Obaidan.2009).

## **Fourth "Biometric Signature"**

In addition to being expensive, this form is one of the latest forms of electronic signature. It is used by the largest banks in developed countries. This form is one of the electronic signatures

depending on the distinctive signs of each person such as personal fingerprint, human eye scan, human face recognition, verification of the tone of voice and personal signature. The identity of the customer is verified by entering information into the computer or modern means such as taking accurate pictures of the user's eyes, voice, or hand, and they are stored in an encrypted manner in the computer's memory, so that the matching is then done. This system faces some problems, including that the signature forms are placed on the hard disk of the computer. Also, it can be attacked by viruses or copied by the methods used in electronic piracy.

Besides, the inability to use this technology with all available computers. This type of signature needs huge investments to enable users of the electronic network to use the personal characteristics of the signatory person in the electronic signature (S. Al-Muhtadi. 2011).

The association of these intrinsic properties with a person allows him to be distinguished from others reliably, so that a person's fingerprint cannot be similar to another. Therefore, this method has sufficient security, which allows it to be used in signing electronic contracts. The use and trust of this type of signature, like all types of electronic signature, is linked to advancement of technology that secures its transmission without the ability to manipulate it (K. Ibrahim 2008).

### **Fifth: Signing by Using the Keyboard or Moving Cursor**

Most websites present their offers on the Internet through model contracts, which contain boxes dedicated to accepting the contract and agreeing to its terms, such as (Ok) or (Yes). These contracts are approved by signing them and placing the moving cursor in the computer screen on the icon and clicking on it (mouse click of), or pressing it with the acceptance key on the computer keyboard (Enter). The signatory's expression of his will in this way is legally permissible, as it does not raise doubts about the signatory's indication of approval (M. al-Sharifat 2019).

However, this method is not a signature in which the electronic editor gains the necessary elements to consider it as final evidence. Therefore, commercial establishments, in most cases, resort to adding icon in the contract form on the web page in which the contractor puts the password; in addition to the possibility of using the private key to give its own certificate that is approved by the state (K. Ibrahim. 2008).

Through our presentation of the most important forms of electronic signature, it becomes clear to us that most legislations did not specify its forms, but rather left the field open in anticipation of what may appear from new and multiple forms of electronic signature as a result of technological developments. The important thing in this regard is that any signature can appear must achieve the goal. The intended purpose of the signature is to have a high degree of trust and security. The identity of the user must be identified and expresses his will to abide by the content of the electronic document. Also, it should not allow the possibility of its use by others.

## **The Second Section: Authentic Electronic Signature**

In terms of the principle that says "no proof, no right" that calls for a search for the authenticity of the electronic signature. If there are no rules for regulating evidence in general, there is no room for obtaining the right. The acknowledgment of the electronic proof comes from dedicating legal rules that recognize the evidentiary power (authoritative) of electronic writing and electronic signature. These are the elements of electronic proof evidence and their functional equality with ordinary writing and signature. Accordingly, we will show the extent

of the authenticity of the electronic signature in the first requirement. Then, we will show the authority competent to certify the electronic signature in the second requirement.

### **The First Requirement: how Authentic is the Electronic Signature**

The general principle of evidence is the necessity of proof in writing due to its ability to document transactions between related parties (Article (11) of the Iraqi Evidence Law No. 107 of 1979).

Despite the Iraqi Evidence Law refers to the possibility for the court to benefit from the means of scientific progress in deriving legal presumptions, it was more appropriate to intervene and determine its authenticity. But the Iraqi electronic signature and electronic transactions law was more explicit through the text of Article (4/second), that stipulated the following: “The electronic signature is within the scope of the authentic civil, commercial and administrative transactions established for the written signature if the conditions are taken into account in its establishment, Stipulated in Article (5) of this Law.” (Article (5) of the Electronic Signature and Electronic Transactions Law No. 78 of 2012).

It has made provisions for the authenticity of the electronic signature. This leads to an end to the controversy over its authenticity.

The Iraqi legislator has explicitly stipulated in the Electronic Signature and Transactions Law on the authenticity of the electronic signature (Article (2/Second) of the Iraqi Electronic Signature and Transactions Law No. 78 of 2012).

The signature is considered valid and issued by the signer whenever this signature is associated with its owner through the availability of means that determine the identity of the signer and evidence of his approval of the data contained in the electronic document. So that, the signature has the authentic electronic signature prescribed for the traditional signature whenever this signature complies with the conditions stipulated by the law. These conditions are stipulated in Article (5) of the Electronic Signature and Transactions Law: (The electronic signature shall be authentic in evidence if it is approved by the certification authority and fulfills the following conditions:

- 1- The electronic signature is linked to the signer alone, no one else
- 2- The electronic mediator is under the control of the signer alone, no one else.
- 3- Any modification or alteration in the electronic signature is detectable.
- 4- To be established in accordance with the procedures determined by the Ministry with instructions issued by the Minister.

The availability of legal conditions in the electronic signature is not sufficient to consider it as an argument. Rather, the signature must be attested by the certification body, that is responsible for verifying the identity of the signer by issuing an electronic certificate indicating the signatory party and its attribution to the one who issued it. This is to ensure the authenticity of the information authenticated in the electronic signature certificate on the date of its delivery (A. Al-Aboudi. 2017).

The electronic signature is a substitute for the traditional signature whenever the law stipulates its use in official or ordinary documents. The result is that they are free of it when the electronic signature has been made in accordance with the terms and conditions stipulated by Iraqi law.

### **The Second Requirement**

#### **Electronic Authentication Body**

The electronic authentication body is a safe technical means to verify the authenticity of the electronic document. It is attributed to a specific person. It is a third party in legal relations.

This body aims to secure electronic documents and provide confidence and reassurance to the parties to the legal relationship through an electronic certificate in which Certifying the identity of the person signing the electronic signature (H. Abu Sham. 2020).

The electronic authentication certificate is defined as: "the document issued by the certification body in accordance with the provisions of this law, which is used to prove the attribution of the electronic signature to the signer" (Article (1/1) of the Iraqi Electronic Signature and Transactions Law).

Therefore, some electronic transactions may take place through closed networks, through which dealing is restricted to a limited number of individuals and bodies such as networks of legal persons, whether public or private. This is due to the invention of new systems for communications that contributed to increasing the efficiency and speed of transactions that take place over the Internet, and consequently the entry of the electronic document into all aspects of life. The latter may be represented in electronic records of a person's data and his civil and family status. It may be a contract concluded between two parties whose subject is a civil or commercial transaction (Gh. Iman. 2013).

Jurisprudence and comparative law differed in the terminology given to electronic authentication bodies. Some called it the term (authority of publicity (A. Al-Marri 1998) We agree with the opinion (A. Al-Aboudi. 2017).

that the term (electronic notary) is consistent with the function performed by the notary in the concept we know within the framework of the traditional notary, who is usually a third person and a public or private technical neutral entity. The electronic certificate of authentication issues through an electronic record. It requires a set of information related to the certificate request, the granting body and its validity date.

The Iraqi legislator defined the certification body as the legal person authorized to issue electronic signature authentication certificates (paragraph 14 of Article (1) of the Iraqi Electronic Signature and Transactions Law).

It is noted that the definition limited the electronic certification service to the legal person instead of the normal person, because it is difficult for the normal person to undertake the work of electronic certification; especially if we know that this job requires a large financial and high technical possibility. In addition to that, it requires complex devices and cooperative group experiences. This explains why it cannot be performed by a normal person. Therefore, it is necessary to refer this job to a legal person (A. Al-Aboudi. 2017).

In all cases, the practice of electronic authentication activity in the electronic transactions field is not absolute, but rather requires the availability of a number of conditions imposed by the laws of electronic transactions. Some related to the necessity of legal capacity. Others are related to the condition of obtaining an official license. Besides, the electronic authentication body possesses a secure and high-tech system to protect the rights of electronic dealers. We did not find a specific party in Iraq working on the application of electronic signature, despite the issuance of legislation in this regard since 2012.

## **Conclusion**

The law must keep pace with the developments taking place in society, especially electronic transactions based on speed in dealing in order to provide the largest degree of legal protection necessary for the parties to maintain trust between the parties.



Since contracting and signing are done electronically, the law intends to give them the authenticity of proof. This is what we have seen from the texts of the Iraqi Electronic Signature and Transactions Law, after giving it the same authority as the ordinary signature in the proof. The difference is in the means by which it is done. This called for the creation of a neutral authority to be entrusted with the task of verification of the identity of the dealers. To achieve this, it found the electronic certification authority, which seeks to bear the burden of verifying the identity of the contracting parties, the issuance of the electronic authentication certificate and other duties that fall upon it. The electronic certification authorities are considered one of the most important ways to reach the credibility of electronic signatures for all parties. These signatures are an essential element for the success of electronic dealing as long as they qualify to acquire the same conditions required by law in traditional manual signatures.

### **By Conclusion, We Reached a Set of Results**

The role of the electronic signature, like its traditional counterpart, is to give authenticity to the contract and express the consent of the contracting parties with its content. However, only the means of its creation differs. It depends on the electronic means in the signature. Although the Iraqi Signature and Electronic Transactions Law were issued since 2012, we did not find an application for it and did not explicitly specify the authority competent to certify the signature. We suggest addressing these matters by conducting courses to learn the methods used to ratify electronic signatures and spread the culture of electronic signature in Society.

### **References**

#### **First, Legal Books**

1. (Al-Rafei (A.) Arbitration in Disputes Arising from Electronic Contracts, Alexandria: Knowledge Foundation (19).
2. (Nassif (E.) International Contracts, Electronic Contract in Comparative Law, First Edition, Beirut: Al-Halabi Human Rights Publications, 2009(19).
3. (Al-Muhtadi (S.) Electronic Government Technology, first edition, Amman: Dar Osama for Publishing and Distribution, 2011(245).
4. (Saad (A.) Electronic Signature: A Comparative Study, Dar Al-Nahda Al-Arabiya, Cairo, 2004 (22).
5. (Doudin (B.) The Legal Framework for the Online Contract, House of Culture for Publishing and Distribution, 2009 (250-251-255).
6. (Jami (H.) Proof of Legal Actions Concluded Through the Internet, Cairo: Dar Al-Nahda Al-Arabiya, 2000(34).
7. (Abu Sham (H.) The electronic signature and its authenticity in proof, The Arab Journal of Scientific Publishing, Issue Eighteen, 2020(496) .
8. (Ibrahim (K.) The Authenticity of Email in Evidence, First Edition, Alexandria: Dar Al Fikr Al Jamia, 2008 (135-218).
9. (El-Sayed Qandil (S.) electronic signature, what it is - its forms - its authority in proof between circulation and quotation, second edition, Alexandria: New University Publishing House, 2006 (67).
10. (Al-Marri (A.) The validity of technology in proving contracts, PhD thesis submitted to the Faculty of Law Board, Cairo University, 1998 (100).
11. (Al-Aboudi (A.) Explanation of the Provisions of the Evidence Law, Al-Sanhoury Library, Beirut, 2017 (385-392).

12. (Bayoumi Hegazy (A.) *The Legal System of Electronic Signatures - A Comparative Rooting Study*, House of Legal Books, 2007(128).
13. (Tharwat (A.) (2007), *the electronic signature, what it is - a risk, how to confront it and the extent of its authority in proof*, Alexandria: New University House (62).
14. (Iman (Gh.) *The Authenticity of Electronic Documents in Evidence*, Supplementary Memorandum for Obtaining a Master's Degree Presented to Al-Masalla University, 2013 (75).
15. (El-Feki (A.) *Modern means of communication and their authenticity in evidence*, first edition, Alexandria: Modern University Office, 2006 (260).
16. (Obeidat (L.) *Proof of the Electronic Editor*, House of Culture for Publishing and Distribution, Amman, 2009(144-149).
- 17- (Al-Saeed Rushdi (M.) *The Authenticity of Modern Communications in Proof*, Cairo: Golden Eagle for Printing, 2002(40).
18. (Al-Kidwa (M.) *E-Government and Contemporary Management*, first edition, Amman: Dar Osama for Publishing and Distribution, 2010(48).
19. (Al-Sharifat (M.) *Consent in Internet Contracts*, first edition, Amman: Without a publishing house, 2005(197-198).
20. (al-Matlaqa(m.) *Electronic Commerce Contracts*, House of Culture for Publishing and Distribution, 2006 (181).
21. (Al-Sharifat (M.) *Consent in the formation of the contract via the Internet*, first edition, Amman: House of Culture for Publishing and Distribution, 2019 (186).

## **Laws**

1. Iraqi Evidence Law No. 107 of 1979.
2. The Iraqi Electronic Signature and Electronic Transactions Law, No. (78) of 2012
3. Egyptian Electronic Signature Law No. 15 of 2004.
4. Jordanian Electronic Transactions Law No. (15) of 2015.