

# ELECTRONIC AUTHENTICATION AS AN TECHNICAL MECHANISM TO ENSURE AUTHENTICITY OF ELECTRONIC TRANSACTION

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## **Abstract:**

*The risks that stand in the way of the growth of electronic commerce are very many, and in order to give confidence and safety to dealers via the Internet, which in turn gives the necessary legal authority to electronic transactions, the Algerian legislator stipulated in Law 15-04 that defines the general rules related to signing Electronic and electronic authentication, on a specialized entity represented by the electronic certification services provider, whose mission lies in electronic certification, as this latter has an important role in securing electronic transactions, by verifying the identity of the sender and verifying the validity of the electronic signature, and attributing it to a person, and this certificate is of great importance in spreading confidence among dealers via the Internet.*

**Keywords:** *Electronic transactions; Electronic authentication; Electronic signature; Authentic.*

## **Introduction:**

The world has recently seen a new breakthrough in legal and administrative transactions, most of which take place electronically. This new version has created enormous difficulties, especially in the legal sphere, whether it relates to how it is concluded, the content of which is determined, or even the methods of proof of it. Most legislation has recognized the authoritative nature of electronic writing and signature.

However, reliance on electronic writing and signature in their electronic form in remote transactions especially the trust and security, so it was necessary for a neutral and trusted third party to protect these transactions and the information contained therein. This specialized body is one of the most important mechanisms developed in this field and this is the so-called certification and electronic documentation entities. environment, which creates a secure electronic environment for dealing via the Internet.

Recognizing the need for users' confidence in modern technological means of dealing, Algeria's legislature has intervened to regulate them under Act No. 15-04 of 1-2-2015 establishing general rules on electronic signature and certification.

Given the seriousness and nature of the electronic certification bodies' activity because the transaction is present in a hypothetical world where it is difficult to control, the importance of electronic certification entities and their obligations are demonstrated.

What can be the following problems: What is the nature of the approved devices in securing electronic transactions? The extent of the service applicant's liability to these agencies? What are the safeguards to make it a safe tool when used by electronic dealers?

In order to respond to the problem posed and to reach the desired results of this study, we followed an analytical descriptive approach. We divided the subject into two requirements. We devoted the first requirement to the concept of electronic certification and the second requirement to electronic certifiers and their services.

## **First requirement: concept of electronic certification:**

Electronic certification is one of the new methods and techniques that have become an inevitable result of the evolution of the means adopted in electronic contracts and electronic transactions. In this requirement, we will try to define what is meant by electronic certification in section I and the most important technology on which it is based, namely an electronic certification certificate as a second branch.



## 1. 1. Section I: Definition of electronic certification :

Electronic certification is the only technical means of verifying the authenticity of an electronic signature or editor<sup>1</sup>, so electronic certification must first be defined in legislative and intellectual terms and then distinguished from a traditional signature.

### 1.1.1 Legislative Definition of Electronic Certification :

Through Act No. 15-04<sup>2</sup>, Algerian legislator did not address the definition of electronic certification as a special term. but defined the electronic certification policy as the sum of the regulatory and technical rules and procedures for electronic signature and certification, It also defined the electronic signature verification mechanism as an electronic signature verification device or software designed to apply electronic signature verification data project ", without the mechanism being defined as a certification technique per se<sup>3</sup>.

### 2.1.1 Legal Definition of Electronic Certification :

Certification or electronic authentication is a secure technical means of verifying the authenticity of a signature or editor, by verifying its attribution to a specific person, through a neutral entity called an electronic certification or authentication services provider<sup>4</sup>.

Electronic certification may be defined as: "A secure technical means of verifying the authenticity of an electronic signature or editor, where it is attributed to a person or entity through a trusted entity, or a neutral party known as an electronic certification or authentication service provider"<sup>5</sup>.

It is also intended: "To verify that the electronic signature has been executed by a particular person, using analytical means to identify symbols, words and numbers, decryption and reverse metaphor, and any other means or procedures that achieve the desired purpose."<sup>6</sup>

### 3.1.1 Distinguishing Electronic Certification from Conventional Certification:

Electronic authentication aims to certify electronic transactions through competent authorities, as well as traditional authentication or certification aims to document non-electronic transactions from them, through the notary, and at first glance we find similarities in the tasks but the difference between them is clear and we will show both differences and similarities between them.

Electronic and traditional certification is similar in some elements, including:

- Both cultivate trust between contractors by demonstrating their identities and give the same legal value to such transactions, and in the event of a dispute invoking their validity.
- Both are regarded as neutral intermediaries in transactions and assume liability for breach of obligations.

Electronic certification differs from traditional certification in the fact that the former is a secure means of certifying transactions conducted electronically by competent authorities and defined under article 2, paragraph 12, of Act No. 15-04.<sup>7</sup>

From the foregoing we find that both electronic certification and documentation have come in order to create confidence and security among contractors.

## 2.1. Section II: Electronic certification :

### 1.2.1. I: Definition :

<sup>1</sup> Mohamed Akouni, Technical and Legal Mechanisms for Electronic Signature Protection, Thought Magazine, No. 18, Algeria, 2019, p. 306

<sup>2</sup> Act No. 15-04 of 1-2-2015 establishing general rules on electronic signature and certification.

<sup>3</sup> Article 02 of the Act No. 15-04.

<sup>4</sup> Muhammad Akouni, Technical and Legal Mechanisms for the Protection of Electronic Signature, Al-Moukar Magazine, No. 18, Algeria, 2019, p. 306.

<sup>5</sup> Samir Dahmani, Electronic Certification as a Safety Tool for Online Payment Mechanisms, Journal of Comparative Legal Studies, vol. 04, No. 01, Algeria, 2018, p. 37.

<sup>6</sup> Nidal Ismail Barham, E-commerce Contract Provisions, Dr. I, Culture Publishing and Distribution House, Jordan 2005, p. 170.

<sup>7</sup> Article 2/12 of Act No. 15-04 states: "Performer of electronic certification services: a natural or moral person who grants prescribed electronic certificates and may provide other services in the field of electronic certification."

Certificat can be defined as: "a document certifying or logically associated with information, as well as a written editor attesting to a person, whether a public official acting on his or her own behalf or merely an individual aware of an incident"<sup>8</sup>.

The Egyptian legislature called it an electronic certification certificate, defined in article 1, paragraph F, of Act No. 15 of 2004 as: "A certificate issued by the licensee that establishes the link between reality and signature creation data".<sup>9</sup>

The Tunisian legislature called it the "certificate of electronic authentication", as defined in article 2, paragraph 3, of the Exchange and Electronic Commerce Act No. 83 of 2000: "The electronic document secured by the electronic lighting of the person through which it is issued, which attests to the impact of the inspection on the validity of the data contained therein."<sup>10</sup>

Algerian legislation is defined by article 2, paragraph 7, of Act No. 15-04, which reads as follows: "Document in electronic form confirming the link between the signature verification data".

The Algerian legislator's definition of an electronic certification certificate was based on the functional aspect and neglected the issuer of that certificate. and distinguished between two types of electronic certification certificate, simple and prescribed and through the text of article 2, paragraph 7, and article 15, of Act No. 15-04, where the former was considered a simple electronic certificate linking data of an electronic signature examination to a particular person by confirming the person's identity The second certificate meets the requirements and requirements of article 15 of the same Act; It is a certificate provided by a trusted third party or by an electronic certification service performer.

Noted from previous tariffs, they agree that the purpose of an electronic certification certificate certification ", is a certificate issued by the electronic certification authority and authorized by responsible entities of the State to engage in its activity, This is to confirm that the electronic signature or e-mail is issued by those to whom it is attributed. and that its signature is correct and that the data are issued from the site and have not been altered or altered<sup>11</sup>, As a reliable evidence, while performing this role, these authorities must exercise caution and precision as a result of the risk to the legal conduct on which they depend.

### **2.2.1. Electronic certification data:**

The electronic certification certificate is of particular importance in the field of proof, as it is relied upon in the identification of clients, which gives confidence in its content. The first is the legislator who urges the precise identification of her data, as confirmed in article 15, paragraph 3, of Act No. 5-04, which stipulates that: "The electronic certification certificate prescribed is an electronic certification certificate that meets the following requirements:

1 To be granted by a credible third party or by an electronic certification service performer in accordance with the approved electronic certification policy.

2 To be granted only to the site.

"3. It shall include in particular:

A- reference to the granting of this certificate on the ground that it is an electronic certification certificate prescribed.

B- Identification of a trusted third party, or a licensed electronic certification service issuer of an electronic certification certificate, and the same country of residence.

C- The name of the site or pseudonym that allows its identification.

<sup>8</sup> Rizwan Karouash, Electronic Certification Bodies under Law 15-04 on General Rules for Electronic Signature and Certification (Concept and Obligations), Journal of Social Sciences, No. 24, Jan 2017, p. 5.

<sup>9</sup> Tamer Mohamed Suleiman Al-Damayati, Proof of Online Contracting, Bahjat Printing and Publishing House, Egypt, 2009, p. 554.

<sup>10</sup> Chapter II of Act No. 83 of 9 Ott 200 on exchanges and electronic commerce of Tunisia, Official Leader of the Republic of Tunisia, 11-Ott 2000, No. 64, p. 2084.

<sup>11</sup> Kbir Amina, Electronic Certification-Comparative Study, Journal of Law and Society, vol. 6, No. 1, p. 146



D -The possibility of including a special description of the site where appropriate, depending on the purpose of using the electronic certification certificate.

E- Data relating to electronic signature verification that are in accordance with electronic signature creation data.

F- Indicate the beginning and end of the validity of the electronic certificate.

G -certificate identification code.

H -The electronic signature described to the electronic certification services performer or to the trusted third party that granted the electronic certification certificate.

I-Limitations on the use of electronic certification where applicable.

J- The value limits of transactions for which an electronic certification certificate may be used where appropriate.

L- Reference to the document establishing the representation of another natural or moral person where appropriate. "

What is observed on these data is that some of them are compulsory and indispensable, as they must be mentioned in all the testimonies, others are optional, and that is clear by drafting the text in its determination of each of these statements.

If the electronic certification certificate satisfies this data, it meets all its requirements and is valid to deal with it.

What is taken from the legislator is that the penalty for the absence of this article from one of these statements has not been specified, is it one of the reasons for its invalidity, or for its cancellation, or can this error be remedied by correction.

### **3.2.1 . Legal validity of an electronic certification certificate**

If the criterion of national or foreign territory is considered in the distinction of electronic certificates, we distinguish between national and foreign certificates and the national electronic certification certificate is issued by national electronic certification service performers, The foreign electronic certification certificate is established in foreign States or by a foreign service provider within the national territory, and we will refer to each other's legal validity as follows:

#### **A - Authenticity of the national electronic certification certificate:**

In Executive Decree No. 07-162<sup>12</sup>, the Algerian legislator launched the term "electronic signature". He is required to have three conditions dealt with in article 3 bis of the same Decree:

- Signature is specific to the signatory
- To be created by means that the site can keep under its exclusive control
- Ensure with the associated act a link so that each subsequent modification is detectable.

Law No. 15-04 notes that Algerian legislation does not designate an electronic signature insured by the electronic signature described. Article 7 of the Act states: "An electronic signature described is an electronic signature in which the following requirements are met:

- To be established on the basis of a prescribed electronic certification certificate
- To link to the site only.
- Can identify the location
- Be designed by means of a secure electronic signature creation mechanism.
- Be generated by means under the exclusive control of the site.
- Be linked to its own data, where subsequent changes to such data may be disclosed "

#### **B - The authenticity of a foreign electronic certificate in proof:**

Under article 3 bis 1 of Executive Decree No. 07-167, the Algerian legislature stipulates that: "Certificates received by an electronic certification service performer residing in a foreign country shall have the same value as certificates delivered under the provisions of this Decree, if the foreign performer is acting under a mutual recognition agreement concluded by the Postal, Telecommunications and Telecommunications control Authority."

<sup>12</sup> Implementing Decree No. 07-162 of 13 Jumada I of 1428 of 30 May 2007 on the system of exploitation applicable to each type of network, including electric wireless and various telecommunications services.

The Algerian legislator has therefore placed the foreign electronic certification certificate at the same level as the national certification certificate. In terms of legal validity, but with the requirement of an agreement between Algeria and represented by the Authority for the Control of Postal, Telecommunications and Telecommunications and between the State of origin of the foreign certificate, in accordance with the principle of reciprocal dependency certificates", i.e., the State under which the foreign service is performed must recognize the certificates issued by the Algerian service provider.

Note that Algerian legislation has dealt only with the issue of electronic certificates issued by foreign entities without a foreign electronic signature, and whether or not it is permitted to be adopted. This is a shortcoming of legislation and should be dealt with and remedied because most electronic transactions contain a foreign element within their parties and for the conduct of such electronic transactions, this law has been developed and it is therefore necessary to adopt foreign electronic signatures.

Article 12 of the 2001 UNCITRAL Model Law<sup>13</sup> on Electronic Signatures recognizes a foreign electronic signature, foreign certificates and grants them full legal validity.

### **Second requirement: Electronic certifier and its services**

The institutional or structural aspect of electronic certification is extremely important. This has led the legislator to regulate the work of the electronic certification authorities. The intervention of a third person is necessary to give the electronic contract effectiveness and credibility by demonstrating that in section I we will address the concept of the electronic certifier and in section II the services it provides.

#### **1 2. Section I: "Electronic certifier"**

Electronic transactions have raised many legal problems that revolve around their proof, as a result of which the need to ascertain the issuance of the electronic transaction to whom it attributes, without modification or misrepresentation, is currently being done by specialized bodies called electronic signature certifiers.

##### **2. 1. 1. Definition of electronic certifier**

At the outset, we note that there is no agreed jurisprudence definition of electronic authenticators and the legislation of States differed in their designation and definition, so we will try to present some definitions of jurisprudence and the position of Algerian legislature.

##### **1 -Legal definition of electronic certifier**

Several jurisprudence definitions have emerged for the electronic certification services provider to include:

"Any natural or moral person who extracts electronic certificates and provides other services associated with electronic signatures and ensures the identification of the Contracting Parties and the retention of such data for a certain period and is obliged to respect the rules governing their work, which are determined by the competent authority."<sup>14</sup>

Others have also defined them as "independent and impartial companies, individuals or entities that act as intermediaries between clients to document their electronic transactions and are a neutral third party".<sup>15</sup>

Electronic authentication or authentication means the process of verifying the authenticity of electronic writing and electronic signature. This process is carried out by a neutral and independent party to an electronic contracting party, and may be a private individual, company or entity, called a "certification service provider", certification service performer or certifier.

##### **2 - Algerian legislator's position**

<sup>13</sup> International Commercial Control Act 1985 with Amendments 2006, Official Records of the General Assembly, Sixty-first Session, Supplement No. 17 (17/61/A), annex I (revised articles only), United Nations publication, Sales No. A.08.V.4.

<sup>14</sup> Rizwan Karouche, op. cit., p. 412.

<sup>15</sup> Ibrahim Khaled Mamdouh, electronic signature, University House, Egypt, 2010, p. 63.

The Algerian legislature, referring to article 2, paragraphs 11 and 12, of Act No. 15-04, made a distinction between two types of entities charged with electronic certification. The first entity gave it the name of the credible third party. According to article 2, paragraph 11, of the Act: "A legal person who grants prescribed electronic certificates and provides other electronic certification services for interveners in the government branch". The second entity gave it the designation of the performer of electronic certification services, defined according to article 2, paragraph 12, as: "a natural or moral person who grants prescribed electronic certificates and may provide other services in the field of electronic certification."

Here, the legislator has distinguished between two types of certifying entities, the first being a trusted third party, and only being a moral person and issuing only prescribed electronic certificates and the benefit of interventions in the government branch only without the public such as departments, ministries and others, and is subject to the control of the government authority for electronic certification.<sup>16</sup>

Notably, the legislator indicated that the performer of e-certification services for the benefit of the public should obtain a licence to engage in his or her activity granted by the economic authority of e-certification<sup>17</sup>, having met a range of requirements<sup>18</sup>, but did not mention that the credible third party providing certification services for those involved in the government branch should obtain it from the Government's certification authority.

The requirement to obtain a licence to engage in this activity is necessary to preserve the interests of customers electronically because it lends some confidence and security to them in the work of these entities on the one hand, and reduces the possibility of being defrauded in the work of these entities on the other.

Lawmaker's practice of providing electronic certification services is exercised by both natural and moral persons when it comes to the provision of certification services for the benefit of the public, but in practice it is not easy and possible for the natural person to do this work because the provision of such services requires considerable material and human potential as well as high and costly technical capabilities that only the moral person can perform.<sup>19</sup>

### **3 -Role of e-certification service performer**

The Algerian legislator's role or function is generally set out in Act No. 15-04 under section II, entitled "Performing electronic certification services from article 41 to article 50".

The first function: to give the private and public key to the person who wants to sign electronically in the sense that the signatory contracts with the electronic certification service performer, to obtain two keys, one general and the other private. The private key is used by the site to encrypt the message to send it, and the public key is used by the addressee to decode the message. If the encryption is successfully decrypted, the addressee confirms that the person to whom the public key was sent actually encrypted the addressee's message.<sup>20</sup>

Function II: If the addressee wants to ascertain the identity and identity of the site here, the second function of the certification services performer will appear, as the addressee issues an electronic certification certificate, containing the data of the public key holder.

<sup>16</sup> The Economic Authority for Electronic Certification (ECA) is the authority responsible for controlling mail, telecommunications and telecommunications, which is mandated to monitor and monitor electronic certification service performers who provide electronic signature and certification services for the benefit of the public. See Articles 2 and 30 of the aforementioned Act No. 15-04.

<sup>17</sup> See article 33 of the aforementioned Act No. 15.04.

<sup>18</sup> These requirements are set out in article 34 of Act No. 15-04.

<sup>19</sup> Zaid Hamza Moghaddam, *Legal System of Electronic Documentation (Comparative Study)*, Journal of Shari' a, Law and Islamic Studies, Faculty of Shari' a and Law, International University of Africa, Sudan, Twelfth Year, No. 24, 2014, p. 133.

<sup>20</sup> Said essayed. Kandil, *Electronic Signature*, No Edition, New University Publishing House, Alexandria, 2004, p. 73.



Function 3: It is the responsibility of the electronic certification service performer to ascertain the data contained in the electronic certification certificate. He may not contract with the site and grant it the general and private keys, without ascertaining the authenticity of the statements made by him, otherwise he is liable to shorten the direction of the third party who relies on these erroneous statements.<sup>21</sup>

Function IV: Establishment of a system to determine the date and time of issuance of certificates and a system to suspend, suspend and abolish them. This function is linked to the electronic signature technique and the primary activity of the certifier.<sup>22</sup>

## 2.2 Obligations of e-certification service performer

The Algerian legislature has adopted a series of obligations towards the providers of the electronic authentication service, which will be addressed in articles 53 to 60 of the aforementioned Act No. 15-04.

Article 53 of Act No. 15-04 states: "An electronic certification service provider who has delivered the electronic certification certificate shall be liable for damage to any body or natural or moral person that has relied on this electronic certification certificate for:

1- The validity of all information contained in the electronic certification certificate described on the date on which it was granted and the existence of all data to be available on the electronic certification certificate described in this certificate.

2. To ascertain at the time of granting the electronic certification certificate that the signatory identified in the electronic certification certificate described, all signature creation data approving the signature verification data provided and/or specified in the electronic certification certificate. Ensure that signature creation data can be used and verified in an integrated manner, except where the electronic certification service performer has provided proof that he has not committed any negligence.

Article 56 of the same Act stipulates: "An electronic certification service performer may indicate in the prescribed electronic certification certificate, to the maximum value of transactions within which this certificate can be used provided that this reference is clear and understandable by others, In this case, the performer of electronic certification services shall not be liable for damage resulting from exceeding the ceiling. "

Article 57 of the same Act stipulates: "An electronic certification service performer shall not be liable for damage resulting from the failure of the holder of the electronic certification certificate described in the terms of use of electronic signature creation data."

Article 58 affirms that: "An electronic certification service performer shall inform the economic authority of electronic certification, within the time limits specified in the authority's certification policy, of his wish to suspend his activities relating to the performance of electronic certification services or of any act which may result therefrom.

In this case, the electronic certification service performer shall abide by the provisions of the certification policy of the Economic Authority for Electronic Certification relating to the continuity of service ".

The Algerian legislature also stipulates obligations relating to the performance of electronic certification services in article 3, paragraph 11, of Executive Decree No. 07-162: "The delivery of electronic certificates and the provision of other services in the field of electronic signature which are in accordance with special quality requirements".

Algerian law did not clarify specific obligations for the e-certification service provider, although the Minister of Postal, Information and Communication Technologies had called for the establishment of

<sup>21</sup>Tariq Kumeel, Authenticity of Foreign Electronic Conformity Certificates, paper presented to the conference "Electronic Transactions", Faculty of Shari'a and Law, University of the United Arab Emirates, 19-20 May 2009, vol. II, p. 592.

<sup>22</sup> Sameh Abdelwahab Elhami, Online Contracting, Law Books House, Grand Magazine, Egypt, 2008, p. 414.



an e-certification law system in order to ensure users' certification, integrity and confidentiality of data.

The provisions of Act No. 15-04 impose on electronic certification service providers several responsibilities, namely articles 61-62 of the Act.

### **Conclusion:**

The trust and security of customers via the Internet comes at the forefront of the guarantees that need to be made available for the prosperity of electronic transactions. Electronic transaction has become an alternative to traditional transactions, with electronic writing replacing traditional writing and electronic signature replacing written signature and the legal mechanism by which the integrity of an electronic signature can be preserved as a modern means of proof, is electronic certification by issuing electronic certification certificate, which confirms the reliability of electronic transactions, Whether civil, commercial or administrative, but this certificate should not be simple on site, His personal data, it should be qualified and prepared to prove electronic transactions, This is what the Algerian legislature has called a prescription in Act No. 15-04, which introduces electronic certification and authentication agencies that, through a number of legal obligations, create a secure electronic environment for dealing on the Internet.

What is noted through Law No. 15-04 that the Algerian legislature has not dealt with some of the obligations of regulation as most legislation has done, nor has it dealt with cases of suspension of the electronic certificate of certification and only with cases of cancellation, which requires the legislature to review and regulate this law.

Through this research we have concluded a set of recommendations that can be summarized as follows:

- 1 -The promulgation of a law on Algerian electronic transactions and its implementing regulations, in particular the establishment of a legal system for writing in electronic form and a system for the validity of an electronic signature.
- 2 -Provision for certification or certification statements and determination of the extent of the documentation authority's responsibility for not fully performing its function
- 3- Eliminate ambiguity about how to ascertain the identity of the issuer of electronic writing, and accordingly the identity of the website electronically.

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