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Electronic Signatures And Their Authenticity

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META DESCRIPTION

In this particular blog the concept of electronic signatures has been discussed and the various facets related to it like-

- *What is the concept of electronic signatures.
- *What is a Digital Signature.
- *What is a Digital Signature Certificate.
- *Scenario of existing laws governing the concept of electronic signatures.
- *Flaws related to the concept of electronic signatures.

have also been discussed in order to make the reader aware about the concept of e-signatures in detail.

INTRODUCTION

This particular blog is on the subject matter that what is the whole concept of electronic signatures.

In this blog the various facets with respect to electronic signatures have been covered in order to make the reader aware of the concept of e-signatures in detail.

The various facets with respect to Electronic Signatures covered in this blog are-

What is the concept of electronic signatures, scenario of existing laws governing the concept of electronic signatures, what is a digital signature, what is a Digital Signature Certificate and flaws related to the concept of electronic signatures.

My findings and suggestions pertaining to the concept of electronic signatures have been mentioned and explained in the conclusion of this blog.

Tags/ Keywords associated with the article:

- Electronic Signatures.
- Laws related to E-Signatures.
- Concept of Electronic Signatures.
- Flaws in Electronic Signatures.
- Digital Signatures.
- Digital Signature Certificate.

MAIN BLOG

Emergence of Electronic Signatures-

A signature can be said to be the ‘**definite identity**’ of an individual being expressed on a piece of paper.

To keep the ongoing transactions and the life of corporates, etc. to function smoothly the advent of Electronic Signatures was necessary as before each and every individual had to go through the whole document and go to the place where the documents were present physically and then authenticate them via giving his/her signature but to keep up with the fast pace of development this method proved to be outdated since now individuals sitting from one part of the world could interact with someone who is at a different part of the world or a country and it was not possible and feasible in each scenario to travel far to such a distance just for the purpose of authenticating the documents via signing them.

So the need of Electronic signatures was a must and this concept developed to meet the needs of the fast developing world.

Concept of E-Signatures-

An Electronic signature provides an **electronic representation of a particular person’s signature** which represents that individual’s identity electronically and when a particular person gives his electronic signature on a particular document it works in the same fashion as of a physical signature i.e. **to give proof of consent and that person’s assent** to the contents of the document.

The European Union’s Regulation 910/214 regulated and defines an electronic signature as “in electronic form which is attached to or logically associated with other data in electronic form and used by the signatory to sign”.

Electronic Signatures as defined under the law-

Electronic Signature is defined under Section 2 (ta) of Information Technology Act, 2000 as- *“Authentication of any electronic record by a subscriber by means of the electronic technique specified in the second schedule and includes digital signature”*.

The procedure of Digital Signature as per the law-

Rule 4 of the Information Technology (Certifying Authorities) Rules, 2000 explains the digital signature's procedure as:

1. To sign any electronic record or any other piece of information, the person who is signing first has to apply the **hash function** in the signer's software (It is a function used to map data of an arbitrary size into data of a fixed size). Values returned by this function are known as hash codes, digests or hash values.
2. This function computes a hash result of standard length unique to the record present electronically.
3. Signer's software will convert this hash result using the private key of the signer in a digital signature.
4. The resulting Digital Signature will be unique to both electronic record and also the private key used to create the digital signature.
5. This Digital Signature will be attached to its electronic record and stored or transmitted with the Digital Signature's electronic record.

Verification of a Digital Signature-

Recipient will receive the Digital Signature and the original message. After it the following two steps have to be followed:

1. By applying the hash result a new message digest is to be recovered from the original message.

2. Signer's public key will be applied to the digital signature which the recipient receives and as the outcome of it another message digest will be recovered.

And if both the message digests prove to be identical it will conclude that the message has not been altered.

Rule 5 of Information Technology (Certifying Authorities) Rules, 2000 talks about the method of verification of a digital signature:

“The verification of a Digital Signature shall be attained by computing a new hash result of the original electronic record by means of a hash function used to create a Digital Signature and by using the new hash result and the public key”.

Digital Signature Certificate (DSC) -

It is a method to prove the electronic document's authenticity and can be presented electronically to access information, to prove the identity or sign the documents digitally.

Controller of Certifying Authorities appointed by the Central Government grants a license to the Certifying Authorities in order to issue digital signature certificates to subscriber.

Elements of DSC –

1. Name of the issuer.
2. Owner's name and public key.
3. Public Key's expiry date.
4. Certificate's Serial Number.
5. User's Digital Signature.

Validity of a DSC-

A Digital Signature Certificate is valid up to a maximum of three years period.

CONCLUSION

In this blog the concept of Electronic Signatures has been dealt in detail covering the various aspects of it like- What is the concept of electronic signatures, scenario of existing laws governing the concept of electronic signatures, what is a digital signature, what is a Digital Signature Certificate and flaws related to the concept of electronic signatures.

This particular blog would help the readers to analyze the concept of Electronic Signatures as all the various aspects related to it have been dealt in depth in this blog.

Findings-

The main flaw which I found after a research upon the topic of Electronic Signatures is that the **Risk of fraud** is present in the concept since Electronic Signatures are electronically based there is a high risk of fraud and signatory forging as the whole regime of Electronic Signatures is based on the electronic platforms and internet, hence it can be hacked and compromised leading to a great loss to the entities, individuals or the organizations involved in that particular scenario.

Therefore, we can say that the electronic signatures are a boon as well as a bane because at one hand they help us in keeping up with the fast pace of development in this electronic era but on the other a they also pose a high risk of fraud leading to unforeseen losses to the individuals involved.

Suggestions-

To tackle this risk of fraud and signatory forging in the concept of Electronic signatures a method of double-verification can be adopted that is while signing any digital document using electronic signatures the concerned persons should be first confirmed that it is signed by them only and not someone else has done it via forging their signature i.e. **an adoption of additional anti-fraud measures such as getting the authentication confirmation of that particular digital signature via a phone call, e-mail, etc. should be first made before proceeding with the further steps** in the scenario of Electronic Signatures and in this way only the fraud, signatory forging, etc. can be curbed.

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