



**GOVERNMENT OF INDIA**  
 Ministry of Communications And Information Technology  
 Department of Electronics And Information Technology  
 Controller of Certifying Authorities

# Time Stamping

The Regulations under the Information Technology Act, 2000 mandates that the Certifying Authorities shall provide Time Stamping Service for its subscribers. Time stamping legally establishes time of any reference that requires a timestamp. The reference could be documents, transactions, certificates, contracts etc. The Digital Signature function integrates with the time stamping process to mathematically link the reference with time derived from a designated national time source to generate a time stamp. These timestamps can be verified to establish the time attestation required for references. Time stamping services are operated by Certifying Authorities (CAs). Like CAs, Time stamping services are also managed by trusted personnel, operated in a secure environment and subjected to audit and compliance.

## Time Stamping-Key Benefits

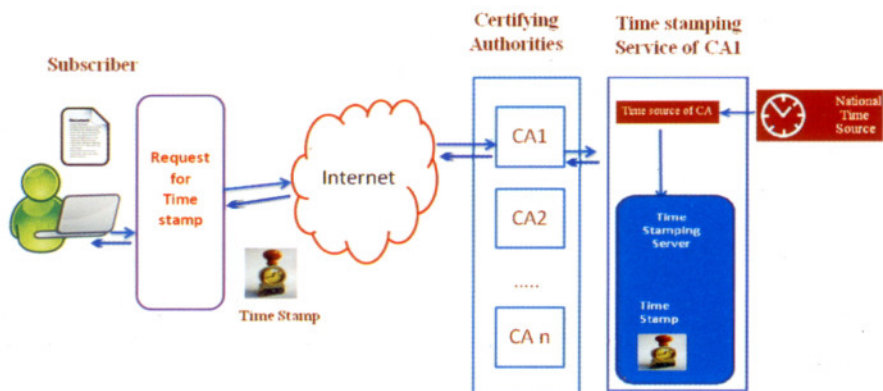
- Accurate time in conformance with Government Guidelines
- Digitally signed timestamps
- Verifiable in future
- Assured integrity and non-repudiability
- Fraud detection
- Electronic Notary
- Content to be time stamped is protected from public exposure

## Time Stamping- Application

Provide stronger evidence in

- Office automation workflows
- Financial transactions
- E-filing
- Share trading
- Emails, contracts
- Medical records
- E-tendering, E-procurement
- Patent, Trademark & Geographical Indicators (GI) filing etc

## Time Stamping Service Framework



Time Stamping

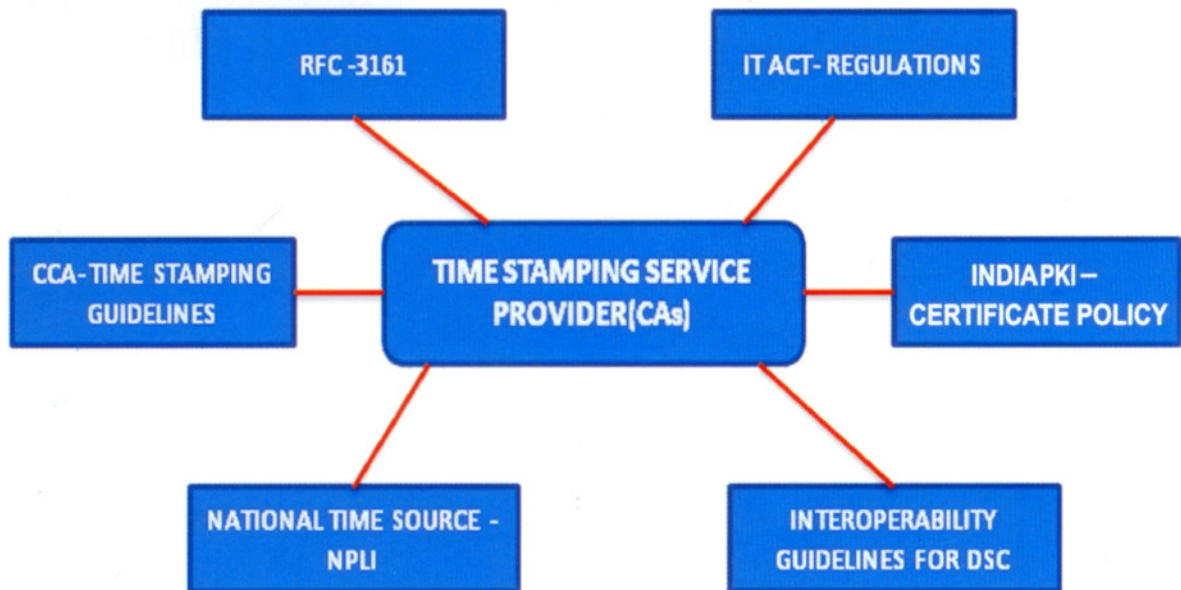
## Time Stamp

Time stamp is a notation that indicates (at least) the correct date and time of an action and identity of the person or device that sent or received the time (IT Act). Time Stamp is a digital signature of a time Stamping Service that establishes the integrity of a reference submitted by subscriber on a specific date and time.

## Time Stamping

Time-Stamping is a service that asserts a time stamp by using Digital Signature which denotes a point in time with respect to a reference received from a subscriber. Subscriber submits a request containing the reference to the time stamping service and obtains a digitally signed timestamp in response. Time source for this implementation is the National Physical Laboratory (NPLI).

## Time Stamping Policy and Time Source Frame Work



A person or a client can access the time stamping service provider using software application. The time stamping client generates the hash\* of the document or transaction or any other reference and construct a timestamp-request and sends it to the time stamping service. Nobody can decipher the original document/transaction since it is the hash of the document/transaction that is sent to the time stamping service, thus ensuring privacy. On the verification of request, time stamping service digitally signs the request along with time derived from a designated national time source and sends the resultant timestamp-response to client. The client must validate signature in the time stamp and keep it safe. The time stamping provider will keep a register of time stamps issued for future verification.

\*HASH is an algorithm that maps or translates one set of bits into another (generally smaller) set in such a way that a message yields the same result every time the algorithm is executed using the same message as input.