



Open Secure Time-Stamping Platform

For E-Commerce and Protection of Intellectual Properties

A Project under the Innovation and Technology Fund


Innovation and Technology Commission
Hong Kong SAR Government


Information Technology Services Centre
The Chinese University of Hong Kong



Foreword

Accurate time and contents of transactions are of paramount importance in e-commerce. However, the contents of orders, bills, e-mails or other electronic documents involved in on-line transactions are susceptible to alteration. It is also possible that either party denies the time or even the occurrence of electronic transactions. These problems lower people's confidence in on-line business and hinder the acceptance of e-commerce.

In the information era, proper and effective exchange of information and ideas is crucial to the advancement of society. The Internet is an excellent medium for people to share their creative works. Unfortunately, people lack awareness of protecting and respecting others' intellectual properties, and any works posted on the Internet are prone to plagiarism. Even worse, there are hardly effective ways to deter people from plagiarizing others' works, nor to prove ownership of creations in case of disputes.

The above problems call for a trustworthy and reliable means to prove the existence of a set of data at a specific time. e-timestamping—a secure on-line notary mechanism—is a simple and all-round solution.

What Is e-Timestamping (e-TS)?

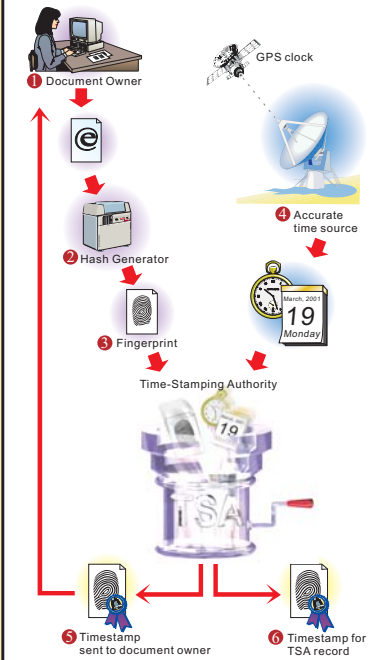
Electronic timestamping (e-TS) is a secure on-line notary mechanism, which certifies that a set of data has existed and has not been altered since a specific point in time. It serves as a trusted third party witnessing the occurrence and particulars of electronic transactions.

Regardless of the format and the content, any electronic data can be timestamped. e-TS can be applied to on-line business transactions, e-mails, secure messaging, intellectual property protection and other time-sensitive services.



Steps of generating a timestamp:

- 1 A person intends to obtain a timestamp for a piece of electronic data he/she possesses.
- 2 A fingerprint (technically, a hash value) for the data is generated on his/her computer.
- 3 The fingerprint is sent to the Time-Stamping Authority (TSA).
- 4 The TSA generates a timestamp with the fingerprint and the date and time obtained from an accurate time source, e.g. GPS clock.
- 5 The timestamp is sent back to the sender.
- 6 The TSA keeps a record of the timestamp for future retrieval and verification.



If you would like to try generating your own timestamps, please visit our website at <http://www.e-timestamping.com/>



Applications of e-Timestamping (e-TS)

e-TS can be used in many Internet-based services, which include verifying on-line transactions, witnessing intellectual property creation and certifying record integrity.

How does e-TS promote e-commerce?

On-line bills and orders can be timestamped to prove that the transactions occur at particular moments and their contents have not been altered since then. With e-TS, fraud and repudiation on time will hardly be possible. Customers and suppliers will then have confidence in buying and selling on the Internet.

How does e-TS protect intellectual properties?

Any creative works, including text, graphics, audio and video, can be timestamped to certify their existence since a particular point in time. e-TS discourages infringement of intellectual properties. If a creation is being plagiarized, the person with the earliest timestamp will have strong evidence in claiming the ownership of copyrights of that creation.

The following are some other potential applications of e-TS:

- Brokerage house transaction
- Electronic tendering/quotation/bidding
- Contract/Document signing
- Closed financial book
- Will declaration



About The Project

At present, there is neither any e-timestamping services in Hong Kong or other countries in the region, nor an easy-to-use software platform for companies to integrate their applications with e-timestamping services. This inspires us to devise a common software platform and service models to deploy a pilot digital timestamping notary service for the Internet and e-commerce communities.

Funded by the Innovation and Technology Commission of the Hong Kong SAR Government, the Information Technology Services Centre at The Chinese University of Hong Kong undertook this research project in October 2000. The project will be completed by the end of 2002.



Project Objectives

In this project, we are dedicated to:

- Develop software standards, specifications and reference codes for e-timestamping services.
- Develop an open secure e-timestamping platform.
- Develop service models for offering e-timestamping services in different areas.
- Set up a Time-Stamping Authority (TSA).
- Promote the concept of e-timestamping in business use.
- Provide support for collaborating organizations to form commercial TSAs and put the products/services to the market.

Deliverables

By the time the project completes, we will offer a common e-timestamping software platform, including software libraries and application-programming interface (API), and service models for digital notaries, system integrators and application software developers to develop their services and applications. The platform will be available to all interested parties.



Contact Us

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