The Basics

The research-group "Institut für Telematik" of the department for computer-science at the University of Trier is a research and development-center formally administered by the Fraunhofer Society and was established on January 1, 1998 and has since then evolved into an ever-growing competence center that develops solutions for problems in the interfaces between telecommunications and information technology. Around 30 scientific staff members from various countries who are experts in different areas of science are currently with the institute.

The scope of the working group "Institut für Telematik" covers a wide spectrum: From application-oriented information technology and telecommunications research to the development of customized solutions and pilot systems for commerce, industry, medicine and administration. It is also focusing on new media training and continued education, which is offered to cooperation partners as well as employees of companies domiciled in the region and in other areas.

Project Partners

High tech businesses, as well as large and even small and medium sized companies support the institute as project partners. The partner firms implement the institute's scientific findings in practical applications. The focus of the work is on the development and utilization of new information and communications media for technical, medical and social applications.

Areas of Competency

The current research and development projects aim at the practical implementation of the latest scientific findings in the areas of electronic publishing, Internet/Intranet, tele-medicine, secure data transfer, system development and analysis. The Institut für Telematik focuses primarily on the following technological applications:

- Editor systems: Web-based information and knowledge management
- Navigation systems: Processing of information, data interfaces, EAI, data warehouse
- Database management: Innovative middleware on open standard basis, e.g., Smart Data Server (SDS)
- Open network security: Architecture, policies
- Network security: Firewalls, Lock-Keeper, Tiger Teams, CERT
- Content security: Public-Key-Infrastructures, digital signatures
- Mobile technologies and applications: Ubiquitous Computing, Mobile Security, ad hoc-Networks, Smart Cards
- Tele-medicine: Patient CD, DICOM-image management and compression,
- Consulting: Studies, evaluations, audits

Patent Protection has already been awarded to the institute for two of its solutions: <Lock-Keeper> – a security <sluice> between Internet and Intranet, that protects users more effectively against online attacks than firewalls – and <Dicomzip> an image compression process that reduces the transmission times of medical images from several hours to just a few seconds.

Universität-Trier

Institut für Telematik
Hightech-Forschung rund ums Internet

Time Stamp Services by the Institut für Telematik

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Time Stamp Services by the Institut für Telematik

Electronic data processing and network information transmission applications are growing at the speed of light. This growth goes hand in hand with increased archiving problems. Schools, hospitals, administrative offices and corporations are utilizing computers for central tasks more and more.

By executing conventional paper documents the signatory or witness – or – in some cases – notary public - confirms the validity of the data contained in the document as well as the time when the document was created. To this effect, a company, for example, wants to be in a position to prove at a later stage that an electronically compiled contract was on hand at a certain point in time in precisely this format.

The digital, bodiless form of important documents and certificates does, however, cause quite a few difficulties in this context: One the one hand, these digital files are now to take on the role of physical documents, on the other hand, they are expected to protect the integrity of the contents as well as provide adequate proof. A digital signature that identifies the originator is frequently not required – or insufficient.

The Digital Time Stamp

This problem can be resolved with the help of the digital time stamp that marks an electronic document just like a conventional date stamp marks a piece of paper. The Institut für Telematik has realized such a program within the scope of its research projects, which always take a practical approach to any application. Moreover, it has created the institutional pre-requisites of a time stamp service incorporated into a Trust Center.

Functionality

The Institut für Telematik time stamp service offers you the opportunity to place a time stamp on all electronic documents on your computer. Consequently, you can later proof beyond a doubt that the document marked with a time stamp was on hand in this format and not in any other at the time specified on the time stamp. The program, which is downloaded to your computer, compiles a basically unique short form of your file (similar to a finger print) at the touch of a button. Thanks to the one-way function used by the program this finger print, which consists of an illegible sequence of codes, cannot be transformed back into your original file.

The electronic finger print is sent to the time stamp service server located at the highly secure Trust Center operated by the Institut für Telematik in Trier via an encoded Internet connection (https). Just a few minutes after it is received, you receive a response. It contains the time stamp and the signature of the time stamp.

Another touch of a button allows you to verify at any time whether the electronic document has been modified since it was time stamped. To this effect, another finger print of your file is created and checked against the data contained in the time stamp. If the two time stamps match, you can be certain that the file has not been modified since it was time stamped. The program shows the exact time and date of the time stamp.

Practical Examples

Logfile-Security

Logfiles continually document e.g. security relevant events. To this effect, it must be ensured that no modifications can be made to the logs – or that manipulations are at least detected.

Version Control

Have any changes been made to a document or another file? Who actually created the latest version? The time stamp service allows you to verify any of these issues easily.

The Technology

In keeping with its philosophy, the Institut für Telematik is committed to open standards. The user request and verification applications as well as the time stamp service as such have been programmed in JAVA. This guarantees software platform autonomy on the one hand and allows easy upgrades and adaptations of the programs to meet pertinent requirements.

Please contact us if you would like to utilize our services or software in your projects. We will be glad to assist you in any way we can!

Time Stamp Service

- ✓ Fast
- ✓ Dependable
- ✓ Transparent
- ✓ Reasonably priced

Let us sign your files with time stamps!