

# Processo Civile Telematico (On-line Civil Trial)

By Giulio Borsari

*Italian Ministry of Justice – IT Department – via Crescenzio 7/c – Rome  
Phone +39 051 4200210 (alt. +39 06 68620209) – Fax +39 051 4200200*

[giulio.borsari@giustizia.it](mailto:giulio.borsari@giustizia.it)

**Abstract :** The “processo civile telematico” project (which in English can be translated into On-line Civil Trial), developed by the Italian Ministry of Justice, aims to increase the availability of on-line services building a two-way data and document interchange and application interoperability between all the external users (lawyers, expert witnesses,...), all the Courts’ internal users (clerks, judges,...) and all the public administrations involved in civil cases, implementing a high-security PKI architecture and adopting state-of-the-art technical standards, according to the recently available Italian laws.

## 1 Main objectives

The system is intended to enable external users (lawyers, expert witnesses,...) to:

- create, digitally sign and transmit their own legal acts to the defined Court, through a high-security encrypted connection, receiving the official timestamp by the Central System and the digital receipt of acceptance by the Court;
- receive notifications from the Court at their certified e-mail addresses;
- get full access to the information and the electronic acts, regarding their own civil cases, with a wide range of searching criteria, information retrieval functions and conceptual searches.

The system is intended to enable judges, groups of judges and their staff, to:

- manage and plan duties, activities and documents related to the proceedings assigned;
- create, digitally sign and transmit decisions, building a local jurisprudence database;
- analyze proceedings’ and documents’ data (OLAP)..

The main objective for office clerks is the automatic insertion and upgrade of proceedings avoiding manual data-entry and enabling automatic delivering of official notifications to external users.

The Organizational Goals to be pursued are the following:

- Time saving, for judges and office clerks, and improvement of their Case Management-related professional skills with enforcing of their professional capabilities in case management.
- Time and money saving for external users. Useless trips to near or far-away Courts and queues at several front-offices will be avoided, and a better employment of all human resources will be made available.
- Substitution of physical front-offices and traditional paper-based access to files and sentences.

- Creation of a comprehensive knowledge system, through sophisticated data-mining and knowledge management technologies, whose sources are the structured and file databases maintained in every Court.
- Improved monitoring and data analysis will thus be made possible, and the overall organization of the local Courts will be in its turn improved
- Cultural development, inside the Court, of a service-oriented approach towards external users, characterized by increased operational transparency and workload monitoring.

Moreover:

- Private citizens and private industries will be able to access local jurisprudence;
- Financing institutes and banks will be able to easily access insolvency status information.

The system is fully functional from the technological point of view, and is now being tested in seven pilot sites: Bari, Bergamo, Bologna, Catania, Genova, Lamezia Terme and Padova.

## 2 System architecture

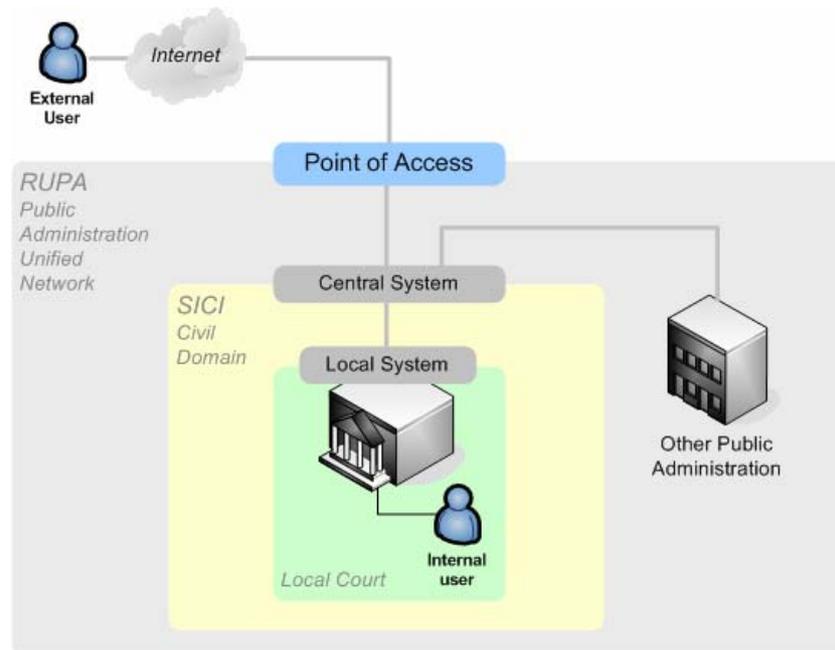
Everything follows is defined in the so-called “technical rules”, formally a ministerial decree, issued in October 2004.

The *Civil Domain* system is called **SICI** (Italian acronym for **Sistema Informativo Civile**, which in English can be translated into Civil IT System”) and is defined as the subsystem of all the resources through which the Justice Administration manages the Civil Trial.

The local courts are then part of the SICI, and are interconnected through the RUPA (Italian acronym for “Rete Unitaria della Pubblica Amministrazione”, which in English can be translated into “Public Administration Unified Network”).

Allowed to the systems are all the users of the previously available services, and can be external users (lawyers, expert witnesses) or internal users (judges, office clerks,...).

The whole system’s schema is shown in this picture:



### 2.1 Point of Access

The Point of Access is the technical structure which provides external users with access – after strong authentication – to the on-line services of the PCT, which are mainly:

- web access to case information and files, through information searching and reading, both on structured data and on documents, based upon individual authorizations;
- document transmission (sending and receiving);
- unique certified e-mail address, guaranteeing legal certainty of transmission and receipt for all sent and received messages;
- preservation of all the messages for 5 years;
- management of the e-mail directory of all its users.

The Point of Access is an external structure, not part of the SICI, and can be activated by a single Lawyers' Council, a public entity or a private entity; in this last case, some reliability and financial prerequisites are needed.

Minimum quality of service together with adequate logical and physical security policies have to be enforced by the Point of Access; everything is detailed in compulsory documents (operative manual and security plan) that have to be maintained across time and kept downloadable. The Ministry of Justice can make inspections in order to check that everything is correctly deployed.

All external users have to choose a specific Point of Access and register to it, according to a formal registration procedure. Once a user is registered, the Point of Access provides him with a certified e-mail address, which is the legal (and unique) address for all the official messages sent from the Courts or other users.

To get access to the on-line services, the individual users must have been previously *authenticated* and (if a lawyer) *certified* by the Point of Access.

### 2.1.1 Authentication

Authentication is needed in order to identify the external user and to enable the on-line services available through the Point of Access. The Point of Access is also responsible for this procedure.

Technically, authentication requirements must follow the CNS technical rules. CNS is an Italian acronym for *Carta Nazionale dei Servizi* (which can be translated into "National Personal Card for On-line services"). These rules basically state that authentication, in order to be valid, must use a smart-card (or another secure cryptographic token), containing an X.509 certificate, protected by a personal identification number (PIN).

After this operation, a mutual secured channel (using SSL3 protocol) is created over Internet between the browser of the user and the Point of Access.

### 2.1.2 Certification of lawyers

It is defined as the procedure needed to assure the user is a fully qualified lawyer.

This operation is based upon the data contained in the local user directory. These information are updated with the data coming from each local Lawyers' Council, which also communicates the status of the single lawyer.

In case the Point of Access is not held by a Lawyer Council, this operation is done by the Central System.

## 2.2 Central System

The Central System is the technical structure which basically connects the SICI to the external Points of Access.

This connection is secured since it's established a dedicated encrypted channel (mutual server authentication, using SSL3 protocol).

Its main duties are:

- delivering of documents and information to the correct receiver (external user or Court);
- returning of the official timestamp to the sender for every legal document transmitted;
- archiving of anything forwarded;
- being a secure proxy for web access;
- holding a central user directory, in order to provide each court the official e-mail address of each user.

As said before, in case the Point of Access is not held by a Lawyer Council, the Central System provides certification of lawyers.

### 2.3 Local system

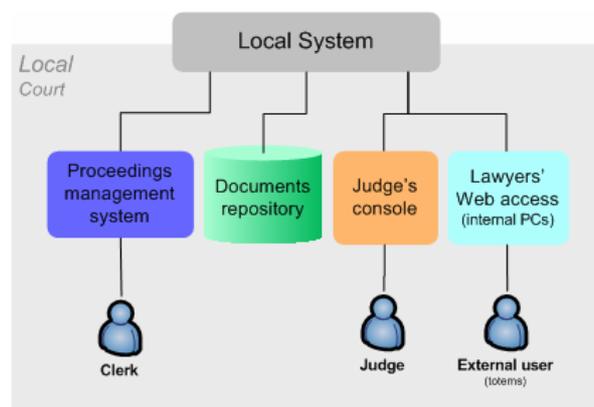
The Local System is the technical structure, located in every local Court, which provides – through web services architecture – the interactions to all the application services both to external and to internal users.

Its main duties are:

- Checking and automatic acceptance of the documents received;
- Tracking and logging of all operations;
- managing of the electronic filing system;
- sending of notifications and communication to external and internal users;
- antivirus control on in-coming and out-coming documents;
- encryption of out-coming documents, when needed;
- providing back-end services for web access (the front-end is located on the Point of Access).

It's actually the application server, the *middle tier* (for all PCT services) both for external and internal application.

The following picture illustrates the interaction between the local system and the internal applications available to internal users and to external users; the latter ones can get web access through “totems” installed in the local Court.



All the connections between local systems and the central system are secured using SSL3.

### 3 Software instruments for the end-users

#### 3.1 For the external user

##### 3.1.1 Document writing

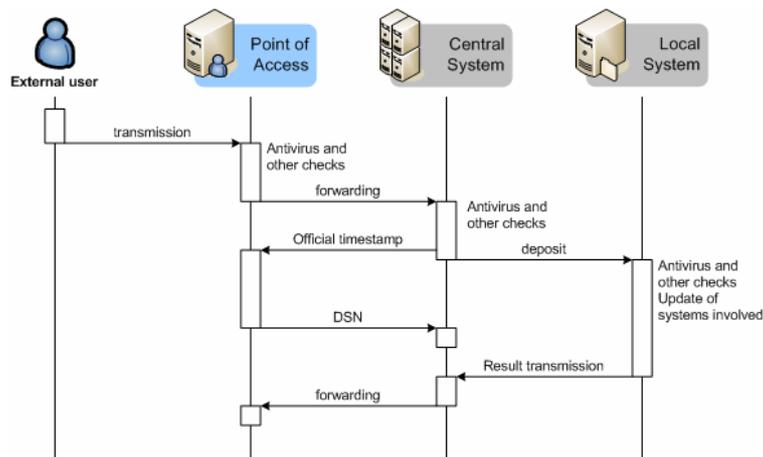
The “external user’s console” is a Microsoft Word embedded software application containing all the functionalities needed to:

- define and create a legal act: after the choice from one of the available models and automatic insertion of pre-defined text (according to the chosen model), the software allows the user to directly complete the document using Word and automatically transforms it to XML, according to DTD defined by the Ministry of Justice;
- create and digitally sign the envelope: an automatic procedure builds the envelope, according to the technical requirements, adding the attachments, which can be only file in these formats: pdf, rtf, txt, jpg, gif, tiff, xml, thus not containing active elements, such as macros or variable fields;
- encrypt the envelope using the receiving Court’s public key: for this purpose, 3DES algorithm is used.

This software has been developed by the Ministry of Justice for experimental purposes only: through all the available specifications and technical details, software houses will be allowed to build their own applications.

##### 3.1.2 Document transmission to the Court

Once the encrypted envelope is ready, it can be transmitted to the Court; the related flow is illustrated in the following activity diagram:



- After the external user has transmitted (typically uploaded) the encrypted envelope to be sent, the Point of Access operates some controls (especially antivirus) and forwards it to the Central System, using SMTP (asynchronous) protocol;
- Once it has checked the envelope, the Central System sends a message – containing the official timestamp – to the Point of Access, which replies with a delivery status notification to certify it has correctly received it,
- the Central System establishes an http/SOAP (synchronous) connection with the local system corresponding to the Court indicated in a particular field (not encrypted) of the envelope and sends it (deposit); the central system also files the encrypted envelope as is;

- the local system decrypts and verifies the in-coming envelope; many checks have to be done before updating the systems and inserting the documents in the filing system (document repository); in case no problem occurs, the local system sends a result message to the central system, which forwards it to the point of access.

### 3.1.3 Web access

PolisWeb is the subsystem which allows web access to all accessible information stored into the Courts' databases, both structured data and documents.

PolisWeb's front-end is located into the Point of Access while the back-end services are part of the local system; front-end and back-end interact using http/SOAP protocol. PolisWeb's front-end is also located into the Court in order to provide web access through "totems".

PolisWeb's most appreciated functions are:

- personal agenda, based on the events occurred to the proceedings; various time parameters are settable as search criteria;
- viewing of documents related to the accessible proceedings or as result of full-text search; the system owns advanced information retrieval and conceptual search capabilities;
- request for original signed documents (which the system sends to the certified mailbox);

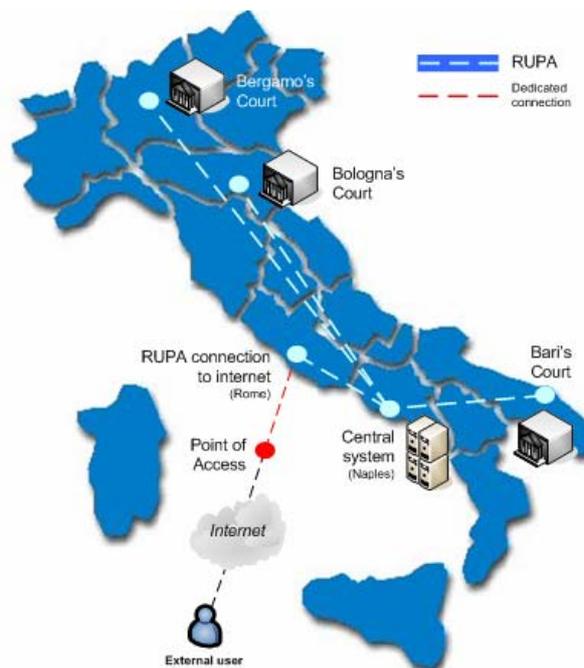
### 3.1.4 Messages from the Court

The Point of Access enables the user to receive messages and official documents in its own certified mailbox.

The Court's local system automatically sends notifying messages to the external users, uploading an envelope to the central system; this system, using the outbox related to the sending Court, creates and sends a mail message to the certified mailbox of the receiver, after finding the address into the users directory.

The receiver's Point of Access replies with a receipt to the central system, which forwards it to the local system, in order to file it for any legal use.

A geographic prospective is shown in the following picture:



### **3.2 For the judge**

The “judge’s console” is a software instrument that allows:

- searching and managing of all the assigned proceedings;
- managing of a personal and/ or group (section) agenda, and planning of all magistrate’s duties and activities;
- viewing and editing of all electronic files;
- defining and creating a legal act (typically decisions): similarly to the external user, it’s a Microsoft Word embedded application which, after the choice from one of the available models and automatic insertion of pre-defined text (according to the chosen model), enables the judge (or his staff personnel) to complete the document directly using Word and, once done, to automatically transform it to XML, according to the pre-defined DTD structure;
- digitally signing and transmitting the decisions;
- analyzing proceedings’ and documents’ data (OLAP).

Most of the “judge’s console” functionalities are also available from outside the Court (typically for home-work) using an external secure connection (though the Point of Access specifically developed for this use by the Ministry of Justice)

### **3.3 For the office clerk**

The office clerks use the proceedings’ work-flow management system for their duties.

Besides, specifically for this project, the application provides a checking environment and manual activities (if needed) for in-coming and out-coming documents and messages.

## **4 Technologies and standards adopted**

All documents and messages sent between internal and external users are XML files.

If needed, attachments can be encoded in portable formats: pdf, .rtf, .txt, .jpg, .gif, .tiff.

XSL-FO is adopted in order to accomplish XML formatting needs.

For digital signature, cryptography and web authentication, and in order to accomplish interoperability issues, PKCS are the standards adopted.

All the asynchronous flows (involving document transmissions between external and internal users) use the SMTP protocol.

For multiple file transmissions (e.g. legal act and its attachments), the encrypted envelopes are built using S-MIME.

For synchronous flows, HTTP/SOAP is the protocol adopted: then all the systems implement a state-of-the-art standard web-service architecture.

Very important benefits from this infrastructure have been achieved:

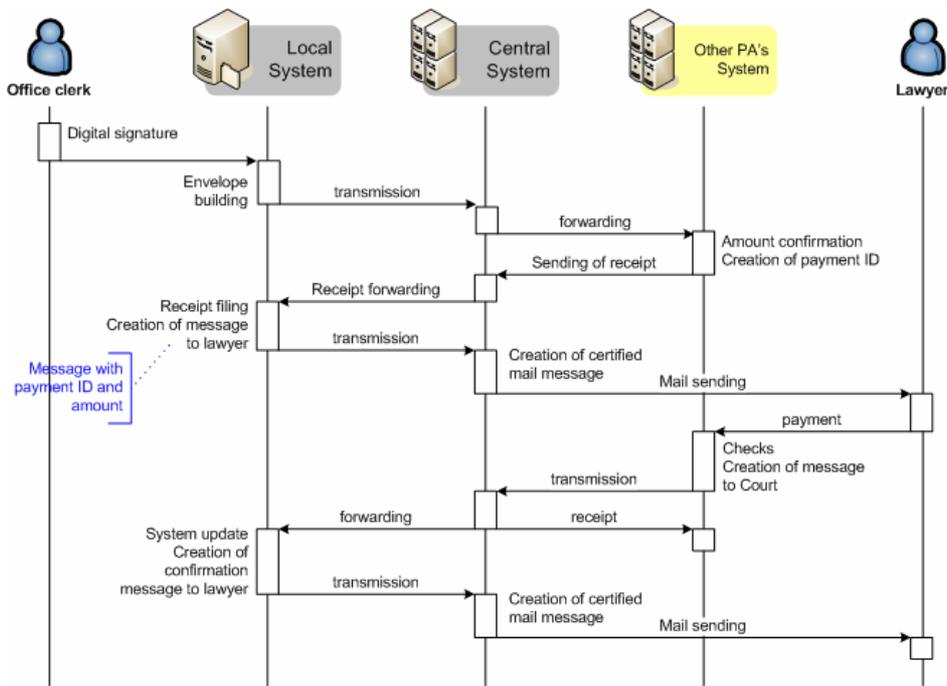
- internal interoperability between different operating systems: the Central System adopts Microsoft Windows, Exchange and BizTalk, while the Local Systems, server side, adopt LINUX and Jboss;
- full interoperability with other external organizations and Public Administrations.

For web access, PolisWeb front-end, located on the Point of Access, invokes the back-end web-services located on the Local Systems; this means that each Point of Access can develop specific e-services for its users, instead of using PolisWeb; in any case, its web pages are fully compliant with the WAI standards.

## 5 Interoperability with other Public Administrations

In terms of Inter-agencies eGovernment services, an experimentation is now taking place between the local Court and the Italian **Ministry of Economics** (Agency for Tax Incomes) regarding registration of sentences (RTAG project), which now are manually delivered.

The flow is shown in the following picture:



In synthesis:

- Once ready, the file of the act is digitally signed by the judge and the office clerk and sent by the local system to the Agency through the central system, using certified mail;
- the amount to be paid, confirmed by the Agency, together with the payment ID is sent back to the local system and immediately notified to the lawyer (via certified mail);
- after the payment of the tax is done, the Court is automatically notified by the Agency and a confirmation message is sent to the lawyer..

Other similar Inter-agencies eGovernment services are under design, such as information interchange with the town Registry Office (e.g. to automatically update the marital status of a person) or the real estates registry office.

---

*The former version of PolisWeb, which since almost two years gives many lawyers intranet and internet access to basic information, being the “ancestor” of the PCT project, has been a finalist at eEurope Awards 2003.*