

# ***SECUREPAPER™ VIEWER***

***VERSION 2.9***

***USER GUIDE***

# INFORMATION

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SecurePaper™ Viewer version 2.9

User Guide written on 26/10/2016

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# SYSTEM REQUIREMENTS

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SecurePaper™ Viewer will run at least on a personal computer equipped with Dual Core processor at 1.7GHz and at least 2 GB RAM with Windows 7 or later and the .NET Framework version 3.5 and 4.0.

# 1 INTRODUCTION

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In the current state of technology, digital signature based on public-key cryptography has gained ground as the main instrument that is able to ensure integrity and the valid origin of electronic documents. Therefore, it offers the same function handwritten signature provides for traditional paper documents. However, a particular need has not been met within the digital signature system: checking whether a paper document, which is the most used vehicle for the exchange of information within the government sector, matches with the (electronic or paper) original document.

SecurePaper™ is the only system enabling the creation of a paper document that can ensure digital integrity.

SecurePaper™ uses hash algorithms with at least 256 bit (SHA-1) and can use any digital signature system such as RSA, DSA, and, of course, PK7.

This guide describes how to use the SecurePaper™ Viewer software, which allows users to check a document digitally signed and secured with SecurePaper™.

# 2 INSTALLATION

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## 2.1 STANDARD INSTALLATION

Installing the SecurePaper™ Viewer software requires just a few simple steps.

Download the installer from the website or insert the software CD-ROM. Look for the contents of the SecurePaper™ Viewer CD-ROM in 'My Computer'. Double-click the "setup.exe" program or similar. The installer will guide you through the installation process.

As soon as the installer is started, the first welcome screen will appear (*Figure 2.1*).



*Figure 2.1*

To continue the installation process, press the "Next" button.

The next screen (*Figure 2.2*) shows the End-User License Agreement for the installation of the SecurePaper™ Viewer software.

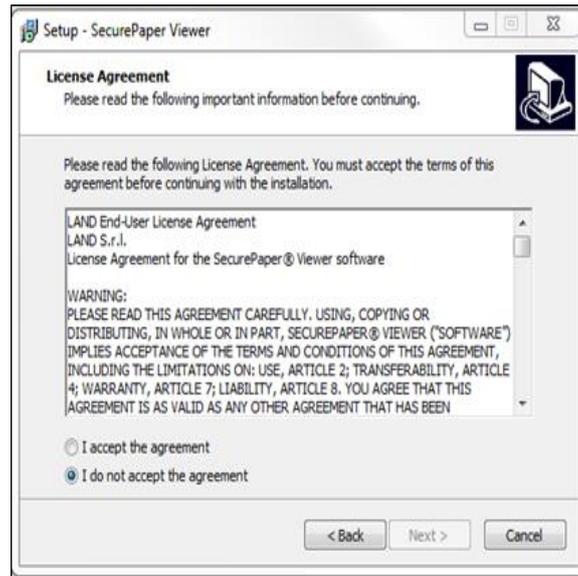


Figure 2.2

You have to carefully read and accept the terms of the license agreement in order to proceed. After you accept the terms of the license agreement, click the "Next" button to view the next screen (Figure 2.3) showing the information about the minimum system requirements for the correct installation and use of SecurePaper™ Viewer.



Figure 2.3

If you meet these requirements, press the "Next" button to continue. If you do not have one or both the .NET framework versions 3.5 and 4.0, it is possible to proceed with the installation of the software. In this case, at the end of the installation, a screen will appear (Figure 2.4),

indicating that SecurePaper™ Viewer will not work properly until you have installed both the frameworks.

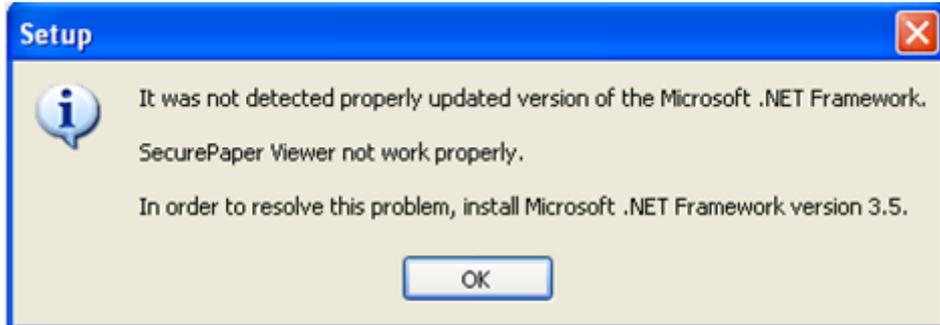


Figure 2.4

The following screens will require information about the customization of SecurePaper™ Viewer. The information you will be firstly asked for is about the installation path (Figure 2.5).

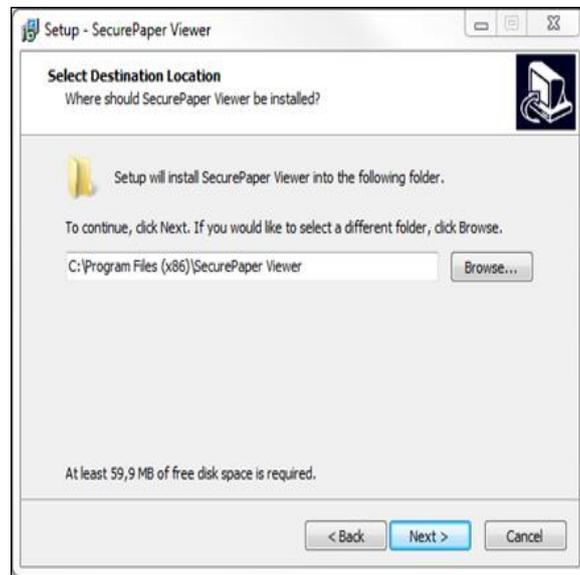


Figure 2.5

Users will be able to choose a location where to install the software, or decide to keep the settings that are already displayed.

In the next screen (Figure 2.6), users have to decide whether to create a folder of links for this software in the Start menu. If so, enter a name for this folder or leave the default one, and then press the "Next" button. This will make it possible to access SecurePaper™ Viewer by using the link you will find in the Start menu, in the group of programs.

If not, check the "Do not create" box and click the "Next" button.

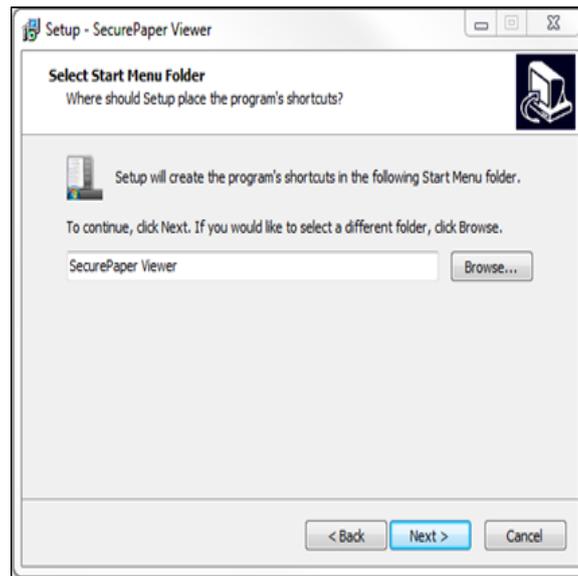


Figure 2.6

The next step is about deciding what further icons you want to create for easy application start-up (Figure 2.7).

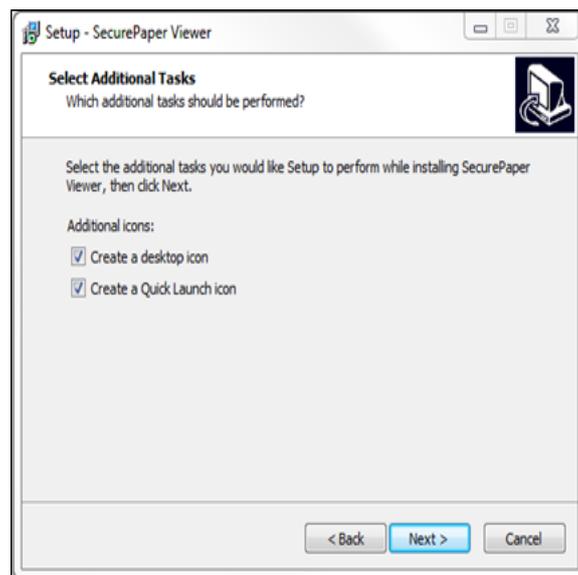


Figure 2.7

Users can decide whether to create a shortcut icon of the application on the desktop and / or a shortcut icon in the Quick Launch toolbar, which is on the Windows taskbar. To make a selection, click the appropriate box, and then press the "Next" button. Of course, you can exclude both options and proceed with the installation. This will complete the first part of the installation process, the one dedicated to users' choices. A summary mask related to the inserted information will appear (Figure 2.8).

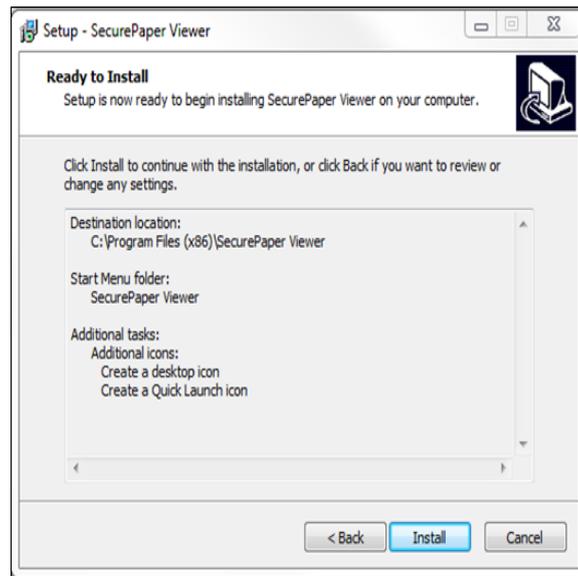


Figure 2.8

Carefully check the information contained in this window. If it is correct, click the "Install" button to start copying the program files.

Wait until the file copying process is finished. The status of the installation process is indicated by a progress bar (Figure 2.9)

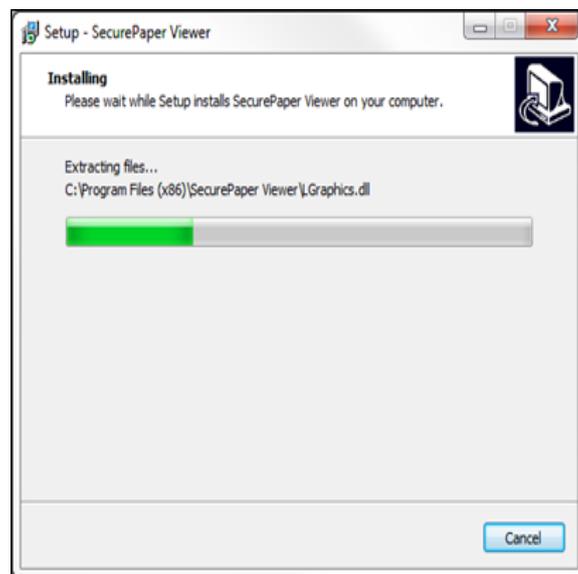


Figure 2.9

When you come to the last screen (Figure 2.10), the installation process is finished. Here you can decide whether to reboot the system immediately or later.

By pressing the "Finish" button, you simply finish the installation, but note that SecurePaper™ Viewer is not fully installed until the system is rebooted.



*Figure 2.10*

SecurePaper™ Viewer is structured as a Wizard, i.e. a series of screens requiring users to take actions progressively, so as to guide them during the processes of scanning, analysis, and comparison of the document. In the following chapters, these three steps will be explained in detail.

For an optimal use of the software, always make sure that you have connected the scanner(s) to the computer before starting the application

## 2.2 COMMAND-LINE INSTALLATION

The SecurePaper™ Viewer software can also be installed from the command line, by entering the name of the installer, optionally followed by one or more of the following parameters:

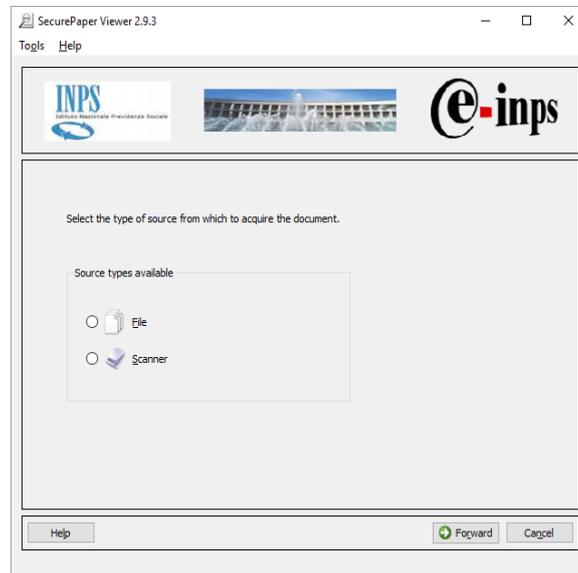
- **/SILENT**: it allows you not to display the wizard, except for the progress bar and error messages (or **/VERYSILENT**: it also allows you not to display the progress bar)
- **/NORESTART**: it prevents the system from rebooting following the completion of the installation
- **/SUPPRESSMSGBOXES**: it deletes the message boxes (it is only active when combined with '/SILENT' or '/VERYSILENT').
- **/LOG**: it creates a log file in users' temporary directory.  
This can be useful if the software installation is not successful and the system administrator wants to investigate the cause.
- **/NOVCREDISTS**: it prevents the installation of redistributables of C++ libraries.

For example, the following command displays neither the wizard nor the progress bar; it prevents the system from rebooting at the end of the installation, hiding any message boxes; it prevents the installation of the Microsoft Visual C++ 2010 Redistributable package:

```
SPViewerSetup.exe /VERYSILENT /NORESTART /SUPPRESSMSGBOXES /LOG  
/NOVCREDISTS
```

# 3 ACQUISITION - DATAMATRIX

When the application starts, a welcome window will appear (*Figure 3.1*)

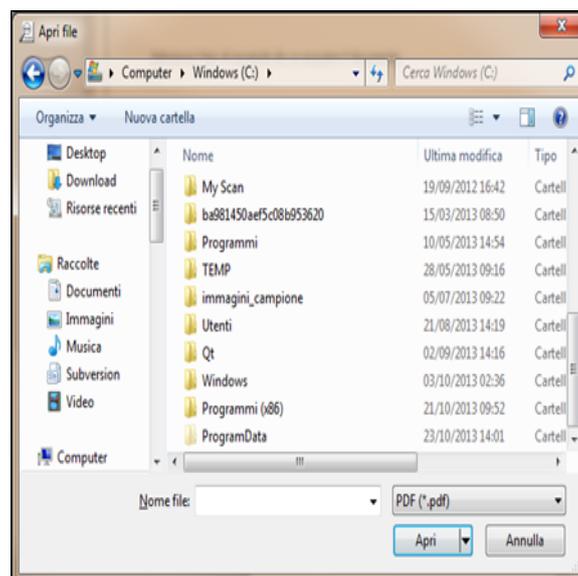


*Figure 3.1*

SecurePaper™ Viewer, structured as a classic "Wizard", will gradually show some options you will have to choose in order to get to the end of the document checking process.

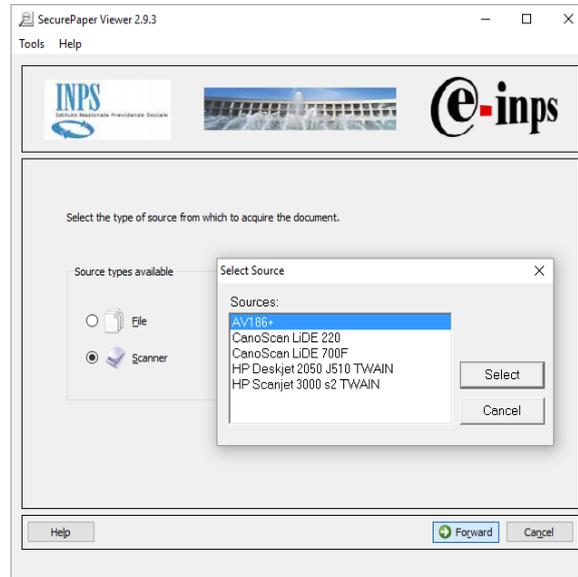
First, you have to scan the document signed and secured with SecurePaper™. In this version of SecurePaper™ Viewer, you can scan and check both a file and a scanned document.

If you choose the former one, a screen that allows you to select the file to check will appear (*Figure 3.2*).



*Figure 3.2*

In case you choose the latter one, a screen that allows you to select the scanner to be used will appear (*Figure 3.3*).



*Figure 3.3*

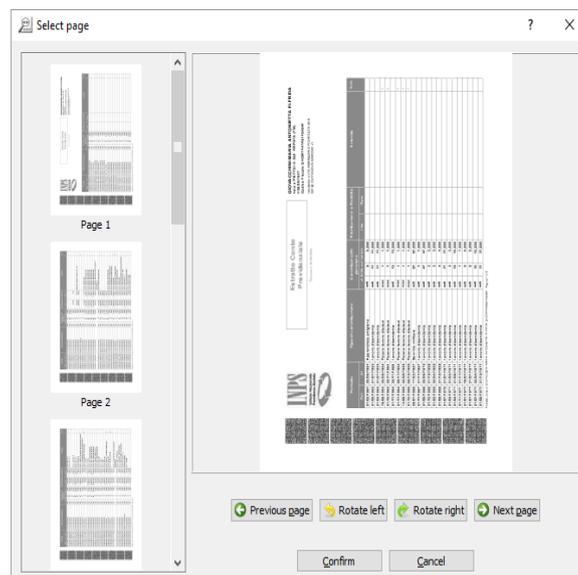
Here is a list containing the scanner(s) installed on your computer. Select the device you want to use, and then press the "Select" button.

The scanning parameters used (resolution, output, etc.) are automatically set by SecurePaper™ Viewer.

To proceed to the next step, place the document to be scanned on the exposure glass, also known as flatbed, in the scanner or its feeder, by paying attention to the alignment of the page, and then click the "Forward" button.

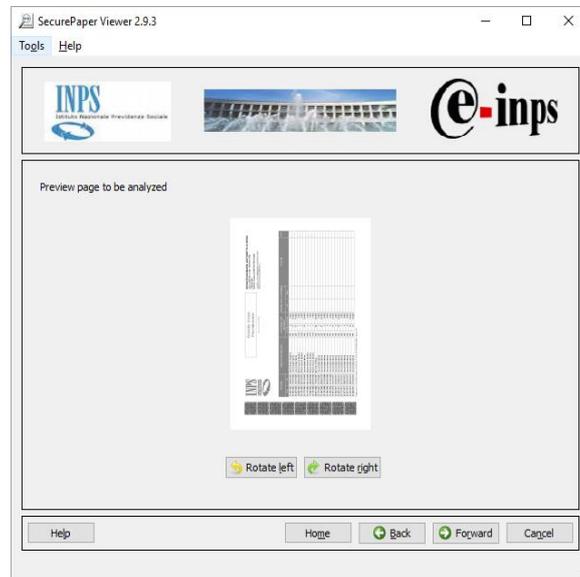
If you want to check an electronic document (file), simply press the "Confirm" button.

Users can select the page they want to check (*Figure 3.4*).



*Figure 3.4*

Upon completion of the scanning phase, a preview of the scanned document will be available in order to allow users to scan it again if, for example, the scanned document is not the one you wanted (*Figure 3.5*).



*Figure 3.5*

# 4 ACQUISITION – DOCUMENT WITH GLYPHS ADDITIONAL PAGE

For documents with glyphs additional page, the procedure is slightly different. This type of documents can have a page with multiple lines of glyphs that contain the entire global information document in the form of SecurePaper™ envelope.

Therefore is necessary for this type of documents to analyze the last page of the document (*Figure 4.1*), whose glyphs hold the necessary envelope to verify the validity of all the other pages of the same document and store the envelope which will be required during the analysis of the other pages in the same document. The latter will contain a single line of glyphs, such as the standard documents and the tests procedure and comparison will be similar to that already described above.

Then we can have two possibilities:

- the document looks like a standard SecurePaper™ document, you can proceed as shown in the previous paragraph;
- the document have the last page with more lines of glyphs; then, the procedure to follow is the one shown below:

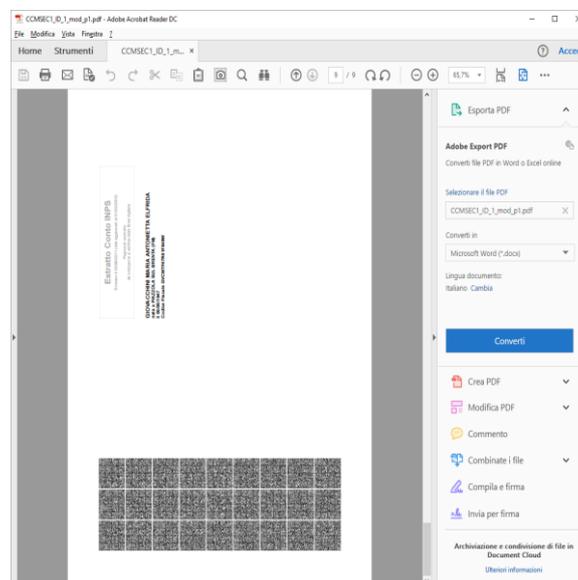


Figure 4.1

After the acquisition process the document by scanner or file, we can proceed to the analysis of the last page of the document that contain the global envelope (*Figure 4.2*). The complete extraction will show a message confirming the validity of the signature. Then, it will be possible to see the public certificate (used for the validity of the signature verification) and eventually

save it, we can save the CADES envelope, one file in XML format (CADES extract from the envelope) or open the PDF file about the document extracted and save it.

Also, there are two buttons, to save or archive the Securepaper™ envelope, with be archived by the program in a specific format and directory form reuse on subsequent phases of graphical comparison and for the analysis of other pages of the document.

It is important to note as, in this case, we cannot proceed to the graphical comparison process; in fact the “Next” button is disabled.

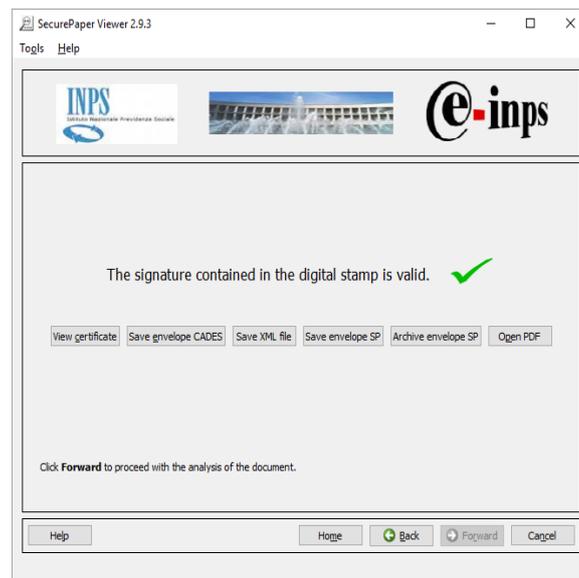


Figure 4.2

After saving the SecurePaper™ envelope you can proceed to the analysis of other pages of the same document, those contain a single line of glyphs that can be analyzed and compared as described for standard documents.

# 5 PROCESS VERIFICATION OF A SECUREPAPER™ DOCUMENT - DATAMATRIX

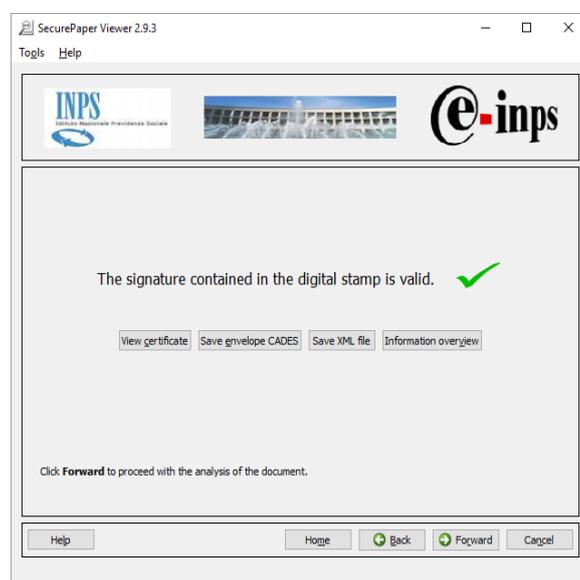
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After you acquired the document from a file or from a scanner you can proceed to its verification that consists in an *analysis* where it is confirmed whether or not the validity of the digital signature of the document recovered from glyphs.

## 5.1 ANALYSIS

During the analysis phase, SecurePaper Viewer™ extracts the data related to the digital signature and the original document from the "glyphs" on the scanned document.

Then, it checks the validity of the digital signature. It extracts and reconstructs it graphically, so as to make it available (*Figure 5.1*).



*Figure 5.1*

At this point the user can either: save the archive contained into the glyphs pressing the "Save retrieved archive" button; this archive, can contain or the original document or the CADES envelope verifying the content (signer name, certificate); or open the original document retrieved by pressing the "Open PDF" button; open the certificate and save the XML file.

# 6 WINDOW COMPARISON

## 6.1 GRAPHICAL COMPARISON

Pressing "Forward" button, the user can access the window comparison between the original document (contained in the glyphs) and the scanned document. This window gives the opportunity to view the dissimilarities in the text that may have been maliciously altered or due to dirt on the scanner glass used. These dissimilarities, if present, are highlighted with a suitable coloring

The window comparison of the original document with the original one (*Figure 6.1*) is divided into three main parts: the left column with some commands and the middle two boxes that contain the views of the original document (green box on the left) and the scanned document from a scanner or file (red box on the right).

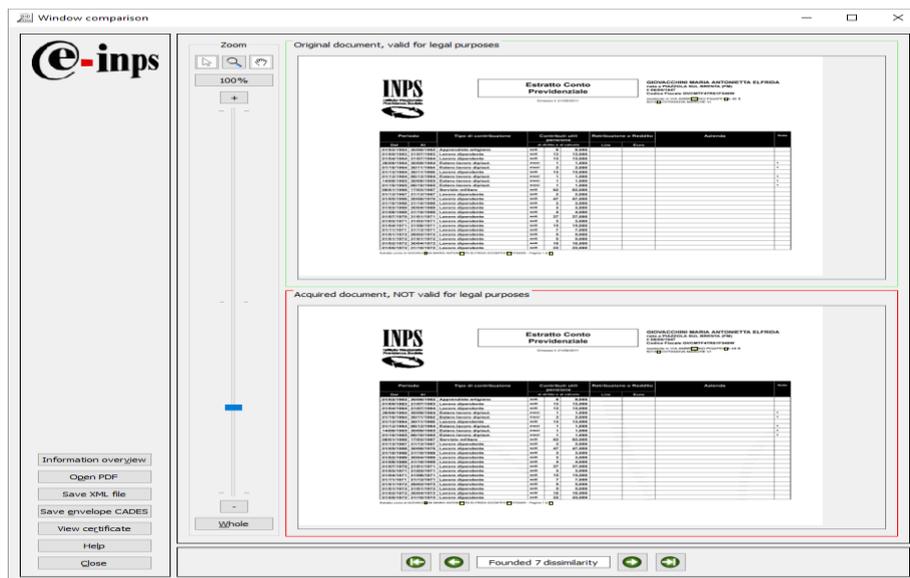


Figure 6.1

If the document contains some dissimilarities, is possible to understand the nature of the changes using the tools of the left in the middle box; to do this is possible to set the magnification level (zoom).

Selecting the "Whole" option will automatically resize the images in the display area. If you double click the document, however, the selected area will be centred in the display area and the size of the document will be set to a magnification level of 100%.

The left column contains the "Show Certificate" button that allows you to display the digital certificate associated with the document. The digital certificate is a file that contains information about the identity of the owner of the digital signature in the document, the public key attributed

to him at the time of release, the period of validity of the certificate, in addition to the data of the certifying body that issued it.

Users can also save the envelope CADES, the XML file and the original document, i.e. the one extracted from the glyphs.

In the "Navigator Differences" (Figure 6.2) the central part at the bottom, show the number of dissimilarities founded on the two documents and pressing "<->" button or pressing "->" button is possible to browse through the dissimilarities showing the pre and post differences.

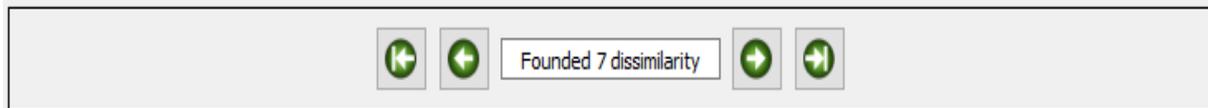


Figure 6.2

Moving the mouse pointer over one the highlighted areas, a pop-up text will describe the percentage of the similarity between the two documents (Figure 6.3).

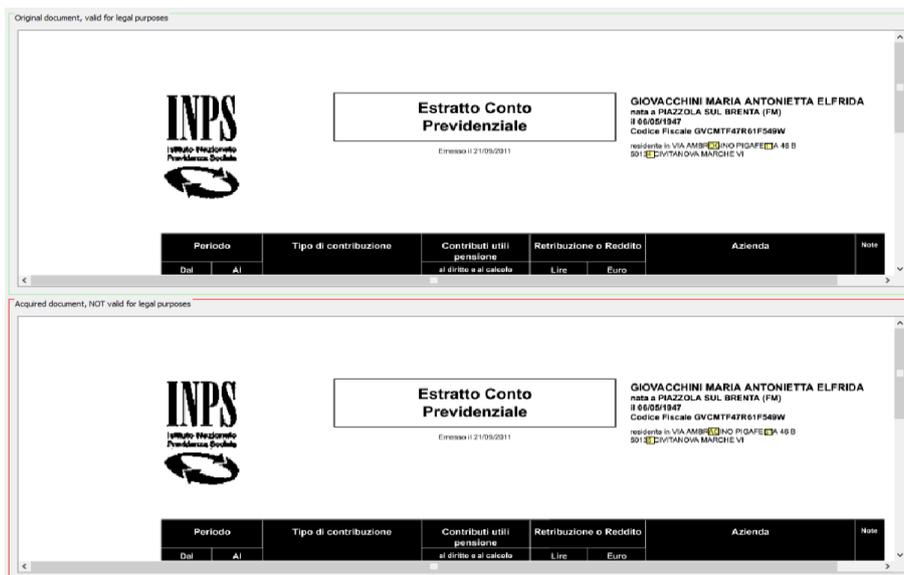


Figure 6.3

Clicking the "Close" button on the left (see Figure 6.4) will show a preview of the scanned document again, and users can scan another document "Home" button or close the application ("End" button).

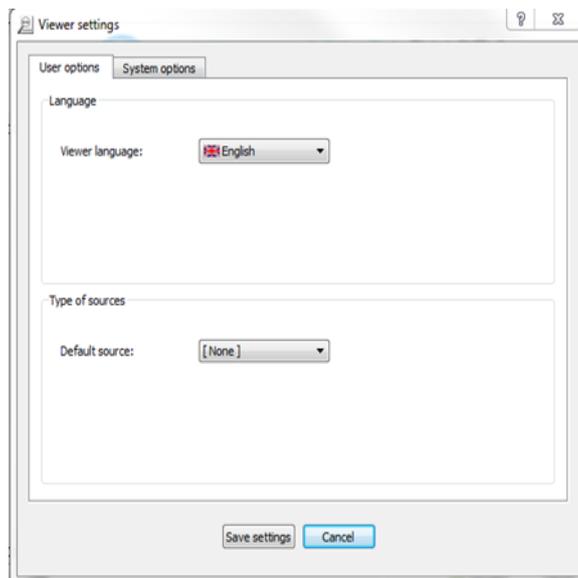


# 7 LOCALIZATION

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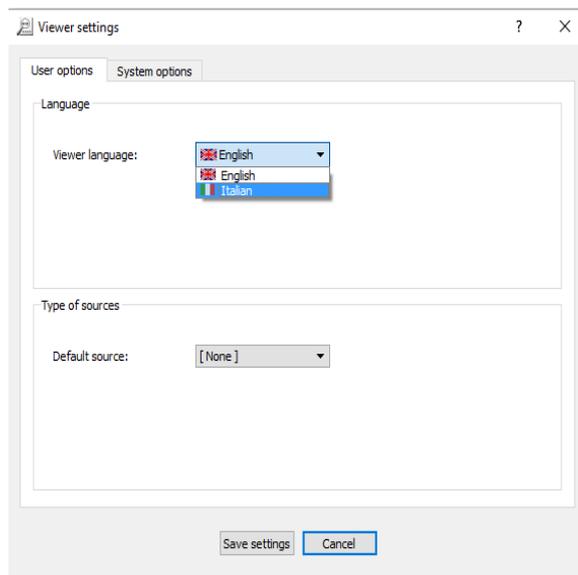
SecurePaper™ Viewer can set a different language from the Italian language.

Acting on *Tools->Options*, the *User options* shows the Viewer's current language (*Figure 7.1*).



*Figure 7.1*

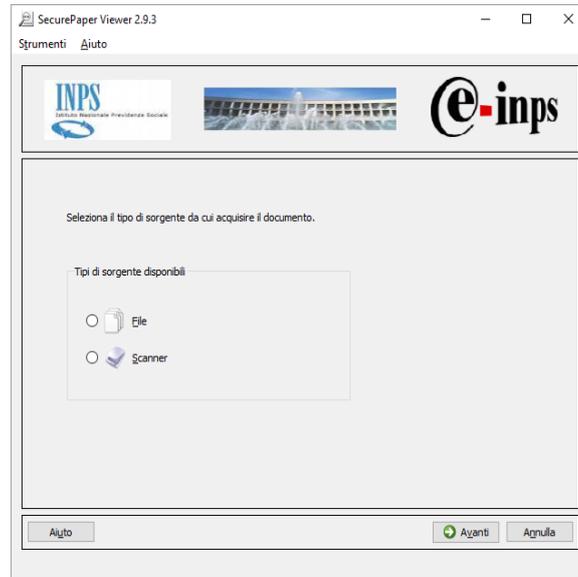
Is possible to set the desired language selecting as shown (*Figure 7.2*).



*Figure 7.2*

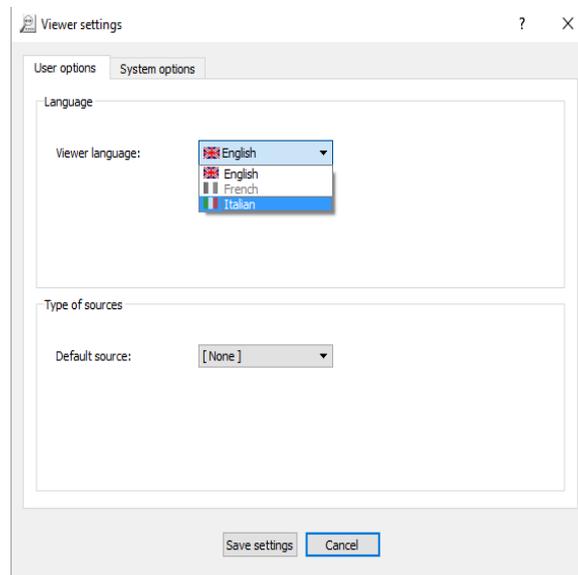
For example, selecting a language (eg. Italian) and saving the settings (by pressing the "Save Settings" button); SecurePaper™ Viewer will require a restart to proceed with the replacement of the application language.

The result will be shown on the welcome window that appears translated into the selected language (*Figure 7.3*).



*Figure 7.3*

If the language cannot be selected (eg. French language in the list of available languages), it means that there is at least a plugin translated to that language, but not the main module (*Figure 7.4*).



*Figure 7.4*

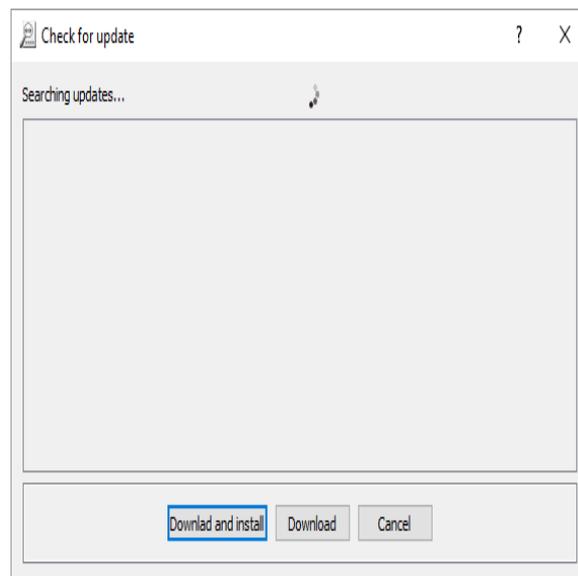
# 8 SETTING-UP AND EXTENSIONS

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The main screens of the application include menus offering a number of features. The "Tools" menu contains the following functions:

- 🔗 Check updates
- 🔗 Install updates
- 🔗 Management extension
- 🔗 Options

**Check updates** – With this function, users can search for any SecurePaper™ Viewer updates in the official website (update.securepaper.it) (*Figure 8.1*). In case any updates are available, users will be able to download and install them



*Figure 8.1*

Users can also decide to download them only, and then to proceed with the installation of updates at a later time.

**Install updates** – It allows users to install previously downloaded updates. Users will only have to indicate the names of the updates and the system will install them transparently. If necessary, SecurePaper™ Viewer will notify the need for rebooting the system in order to complete the updating process.

**Manage extensions** – It allows users to manage the existing extensions; then, users can either uninstall or update them.

**Download more extensions** – It allows users to download extensions that are not in SecurePaper™ Viewer yet.

**Options** – It allows users to change the setting-up of SecurePaper™ Viewer. The first screen “User options”, (Figure 8.2) allows you to set the language for the application and, if necessary, to define a source that will be selected by default when you start SecurePaper™ Viewer.

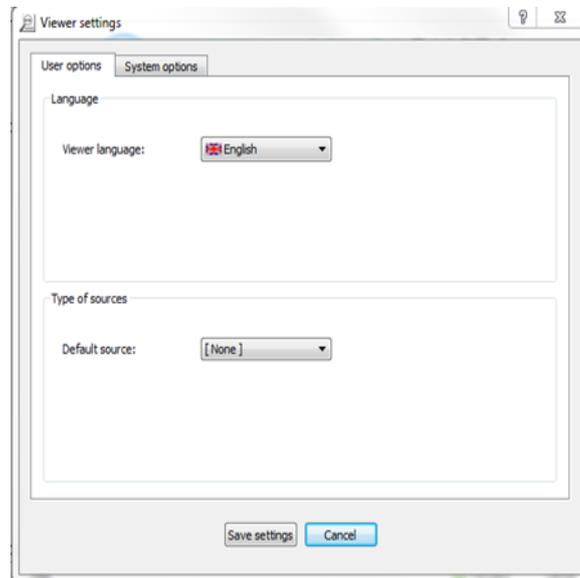


Figure 8.2

The second screen “Administration”, (Figure 8.3) allows you to set up the updating method of SecurePaper™ Viewer and the possible connection to the Internet.

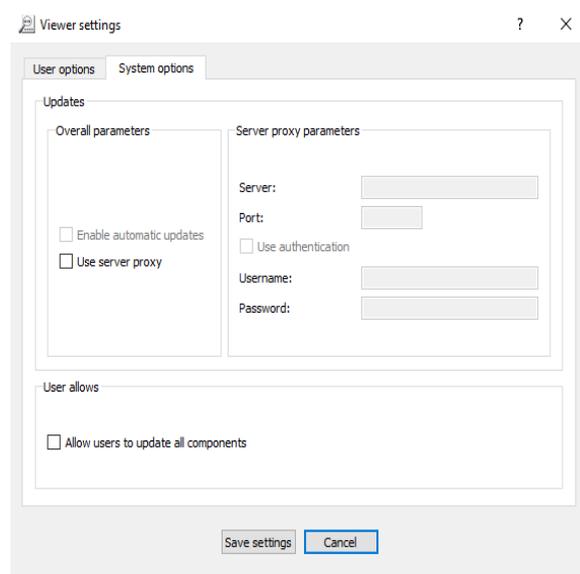


Figure 8.3

The check boxes “Enable automatic updates” and “Allow users to update the all components” options have to checked so that users can automatically update SecurePaper™ Viewer, even when they do not have administrator privileges. The second option refers to the authorization

that only the administrator can grant. The other important thing about this screen is that users can set up the parameters of a possible network proxy.

# APPENDIX – Latest developments of SecurePaper™ Viewer 2

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- ⌘ SecurePaper™ Viewer is equipped with a plugin architecture, which allows you to customize its features in a way completely different from the versions 1.x
- ⌘ With this architecture, an infrastructure dedicated to the SecurePaper™ Viewer updates from the web could be created. Therefore, each component can be upgraded or uninstalled easily.
- ⌘ Thanks to this architecture, users can also install new plugins (extensions) in order to equip SecurePaper™ Viewer with all the features it needs.
- ⌘ These functions can also be installed "on-demand" in some cases, i.e. while using SecurePaper™ Viewer, without interrupting the checking process that is underway.
- ⌘ This version allows users to check the digital signature of the document contained in the glyphs (original), without necessarily having to carry out the graphic comparison.
- ⌘ Users can also save the original document contained in the glyphs, after they check the digital signature.
- ⌘ In case of a CADES envelope (ex-PKCS # 7) in the glyphs, SecurePaper™ Viewer would allow users to save it, just as allowed for the document contained in the glyphs.

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