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? . Introduction

1. FingerSENS Overview

According to development of society, the importance of information is increasing more and more. Consequently, it is in need of a safe and convenient security. But it is easy to expose another person the existing password system. What is worse, it is always inconvenient for remembering it. On the other hand, biometric recognition is an optimal solution for security from the remembrance and appropriation of password point of view.

FingerSENS is a package product for PC and network security based on fingerprint verification technology, which has been studying for long time among the biometric recognition, providing highest security with a reliable fingerprint sensor and user-friendly programs.

2. FingerSENS Feature

2.1 Visual Confirmation : for the result of verification

When you try to log on, if you are successfully verified, a green light id

turned on. If you fail, a red light is turned on. You can easily know whether or not you are granted access.

2.2 Detachable

You can carry sensor module alone by detaching it from cable and it is an economical that you can use it office and home by only one sensor module.

FingerSENS has special functions of saving and chasing the unauthorized user fingerprint, so it blockades the unauthorized user access originally.

2.3 TruePrint & Dynamic Optimization

You can obtain the accurate and reliable fingerprint images by TruePrint technology. As the sensor can check live-ness of finger itself, it is impossible for an unauthorized person to appropriate your fingerprint by the imitative fingerprint.

Dynamic Optimization technology also offers the best quality fingerprint images under any conditions whether a finger is dry and humid.

2.4 Verification Failure Management

. Unauthorized person's logon record can be separately stored from the one of an authorized person so you can check the log record by time or ID.

. When you want to check who the unauthorized persons access your PC, you can identify them by checking their fingerprint images stored.

. As a key feature compared to other fingerprint identification systems, FingerSENS separately stores and manages failed accesses so it can prevent unauthorized persons from getting random access, resulting in enhancing security and reliability.

2.5 Encryption & Decryption File and Folder

There protect personal information and important data as restricting the access of unauthorized persons by strong encryption algorithm for files and folders user selected.

And there provided the same interface as Windows Search for user convenience.

3. FingerSENS Components

. Fingerprint Sensor

. USB Cable

. Program CD

. User Manual

Fingerprint Sensor	USB Cable
Program CD	User Manual

4. Configuration of Programs

4.1 Administrative Tool

These programs give the administrator the proprietary rights to manage log files on PC logon, screen saver and enroll, edit and delete a user by using FingerSENS.

The programs also enable him to manage fingerprint image log files stored during verification process so they increase PC security and reliability as

a result.

4.2 Windows Logon Management

Only a user enrolled through FingerSENS can logon to the PC so personal information can be protected from unauthorized persons.

4.3 Screen Saver and Screen Lock

Your data on PC is protected by activating Screen Saver and Screen Lock, when you leave your PC for a while.

4.4 Encryption & Decryption of File and Folder

When you use your PC with other person together, you can protect your information and data, which you don't want to expose by this program. You can encrypt files and folders quickly and accurately through strong encryption algorithm. As providing the same interface with Windows for user convenience it maintains strong security by user's clicking the button of mouse.

4.5 Device Test

You can check if the fingerprint device works properly or not using the device test program.

FCC NOTICE

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment of and on, the user is encouraged to try to correct the interference by one or more of the

following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

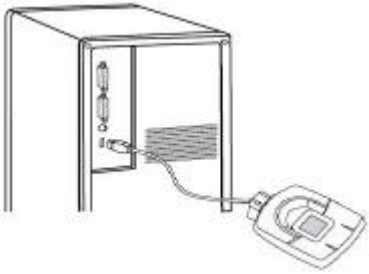
? . Installation

1. Installation of FingerSENS

1.1 Installing H/W

. Turn your PC on

. Connect the USB cable of the sensor to USB port of your PC



. After connecting the fingerprint sensor to PC certainly, install the program to it.

. Connect the USB port of fingerprint sensor to PC, automatically the next stage is to install device driver.

. You follow up the installing order of next page for installing device driver.

. Above of all, you must connect the USB port to PC. If not to do, there is a possibility that system accident occurs in your PC.

1.2 Installing Device Driver

Figure 1) New Hardware Wizard

? As like (Figure 1), “Found New Hardware Wizard” screen automatically appears.

? Click <NEXT> on the same screen.

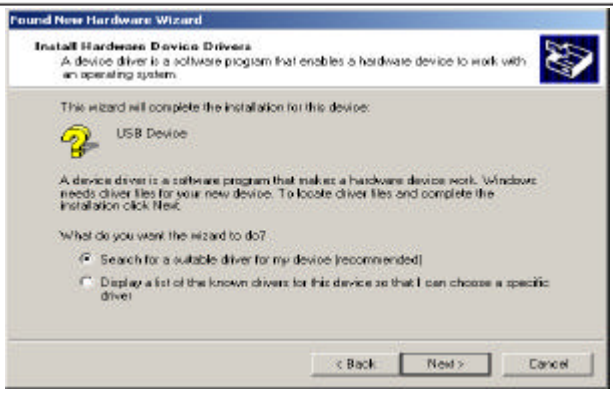


Figure 2) Driver Search

? As like (Figure 2), after choosing "Search for a suitable driver for my device (recommended)" and then click <NEXT>.

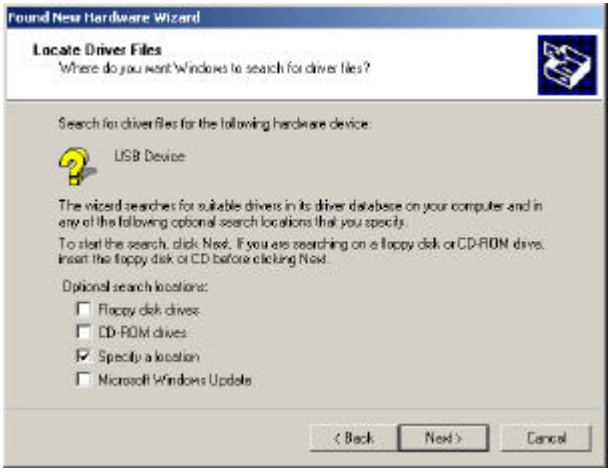


Figure 3) Selecting Driver

? Choose "Specify location" and click [NEXT].

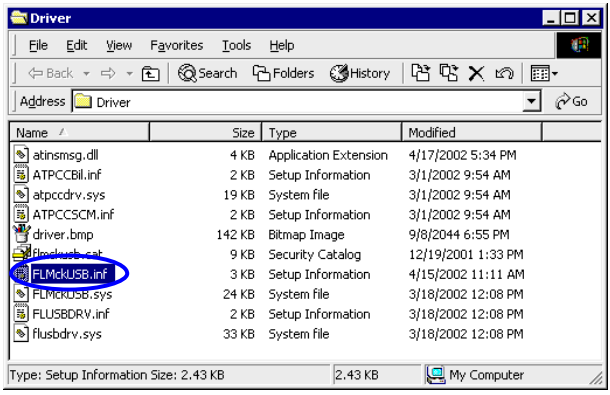


Figure 4) Searching Driver

? Insert the CD included in the FingerSENS package.

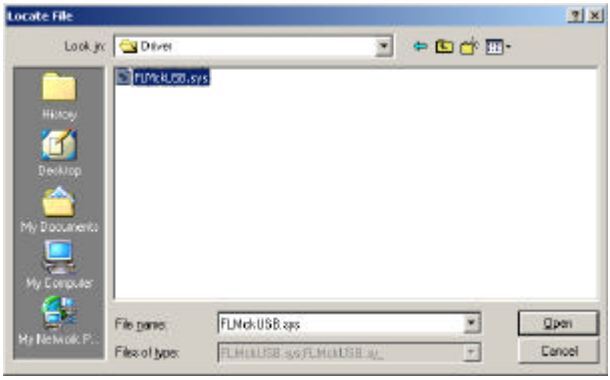


Figure 4-1) Choosing Driver

? Choose where you want to install driver through browser.

? Choose CD-ROM driver and find driver folder and click [OPEN].

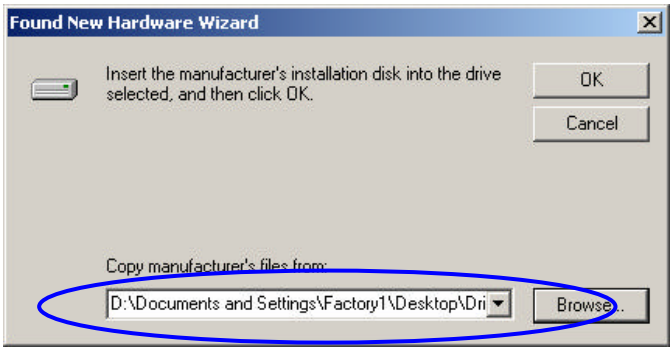


Figure 5) Selecting Driver Location

? As like (Figure 5), location of the driver program is displayed.

? After deciding "Searching Location" and click <OK>.

? Find the program(driver) you want to install in the CD.

Figure 6) Searching Driver

? As you specified what you want to install driver successfully, "as like (Figure 6)" screen appears.

? After checking searched driver and then click [OK].

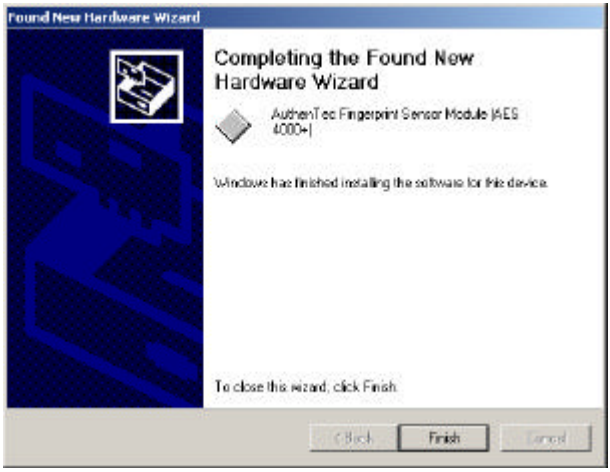
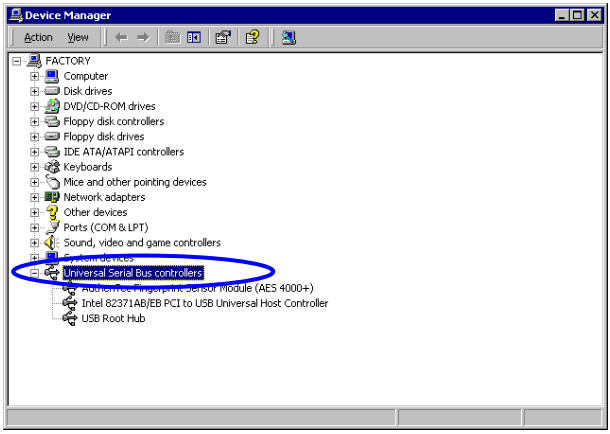


Figure 7) Completion of Installing Driver

? If you see as like (Figure 7), Driver Installation is done successfully.

? If driver installation is done successfully, the screen as below in the 'hardware administrator' is displayed.


Device Manager
Action View
FACTORY
Computer
Disk drives
DVD/CD-ROM drives
Floppy disk controllers
Floppy disk drives
IDE ATA/ATAPI controllers
Keyboards
Mice and other pointing devices
Network adapters
Other devices
Ports (COM & LPT)
Sound, video and game controllers
Universal Serial Bus controllers
Intel 82371AB/EB PCI to USB Universal Host Controller
USB Root Hub

1.3 Installing S/W

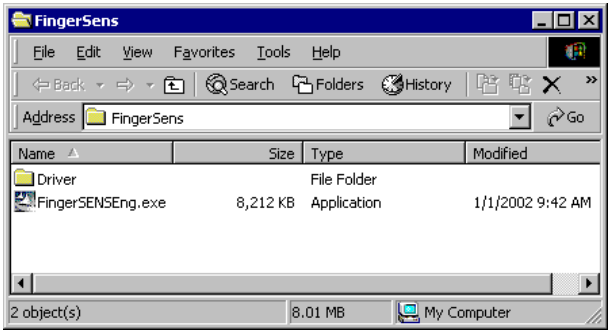


Figure 8) Searching S/W Program

- Choose "Disk 1" folder in the program CD.
- As like (Figure8),double-click "FingerSENS2000ENG.exe" file in the "Disk 1" folder.

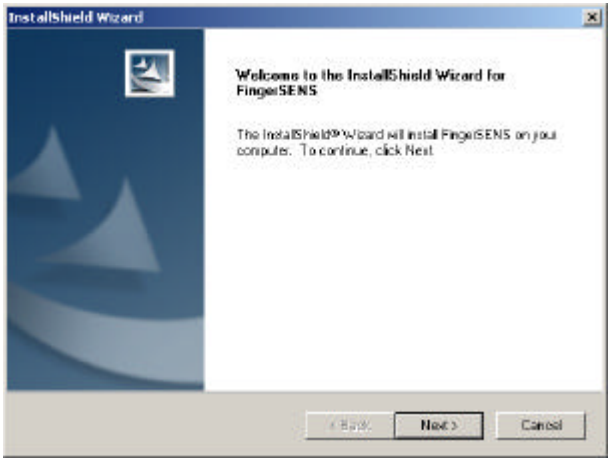


Figure 9) Implementing Program

. Click <NEXT> in the (Figure 9).

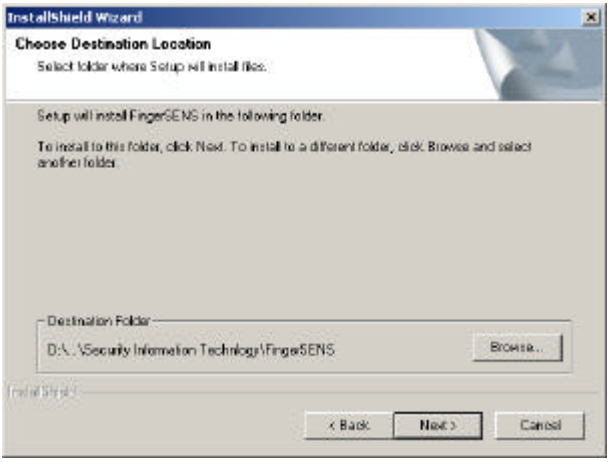


Figure 10) Choice of Destination Location to Install Program

. In this window, you can choose where you install the program. You can choose either the pre-set location as default (in the Figure 10) or change the location at user's pleasure by clicking [Browse] button.

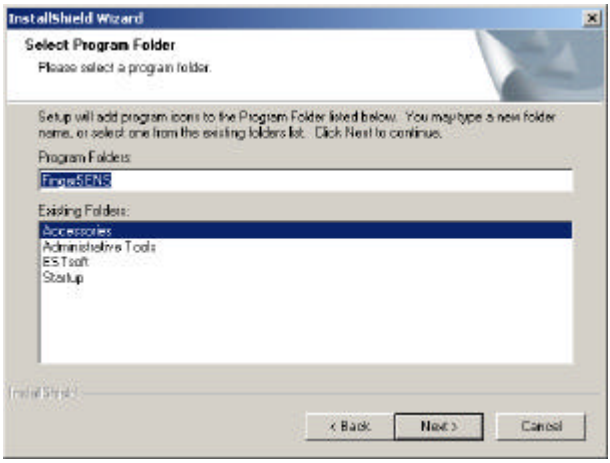


Figure 11) Program Installation Procedure 1

. Click <NEXT>.

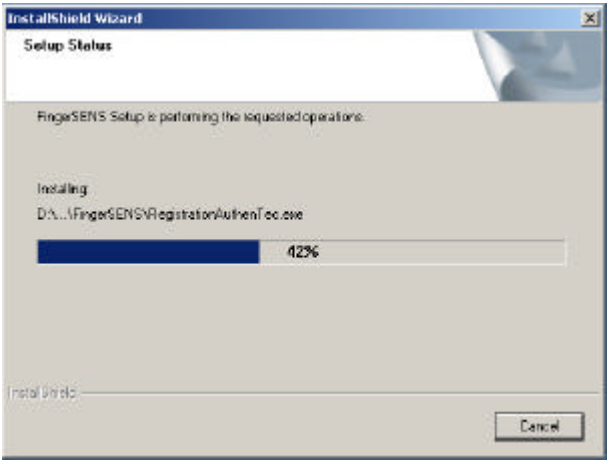


Figure 12) Program Installation Procedure 2

. (As like Figure 12) Installation is being processed.

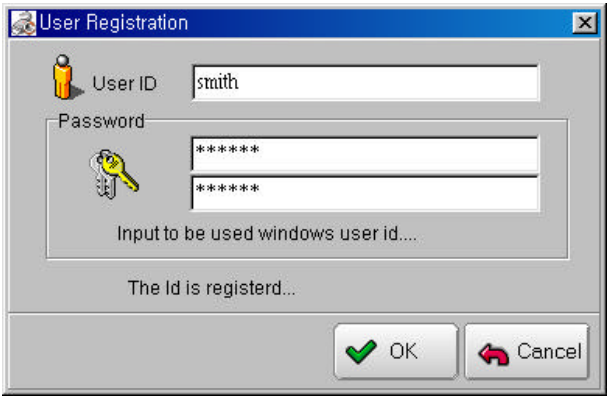


Figure 13) Administrator Registration

. After finishing installation of the program, as like (Figure 13) "Administrator Registration" window is automatically displayed.

? As like (Figure 13), after entering ID and Password what you want and click

.

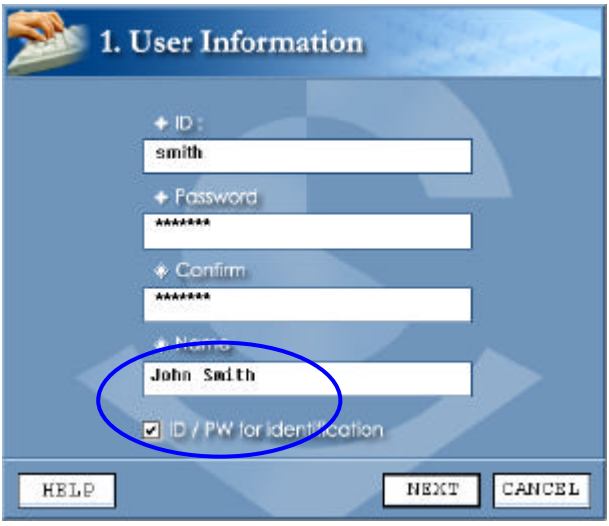


Figure 14) Confirmation of an administrator's information

. Check administrator's ID and password again which you entered in Figure 13.

. Type administrator's name in Figure 14 and click Next.

. Provide against Failed fingerprint verification, you can use ID and Password also for user verification.

. When the fingerprint verification is unavailable for the accident of the enrolled fingerprint, you can take verification by ID/PW.

Figure 15) Registering Administrator's Fingerprint

- After inputting the fingerprint 3 times, choose the finger of which fingerprint is taken.

- The reason administrator has to input his fingerprint 3 times is to obtain fingerprint information sufficiently enough to enhance security and system management performance.
- When you input your fingerprint, you continue to take on and off your finger on the sensor for taking various fingerprint.

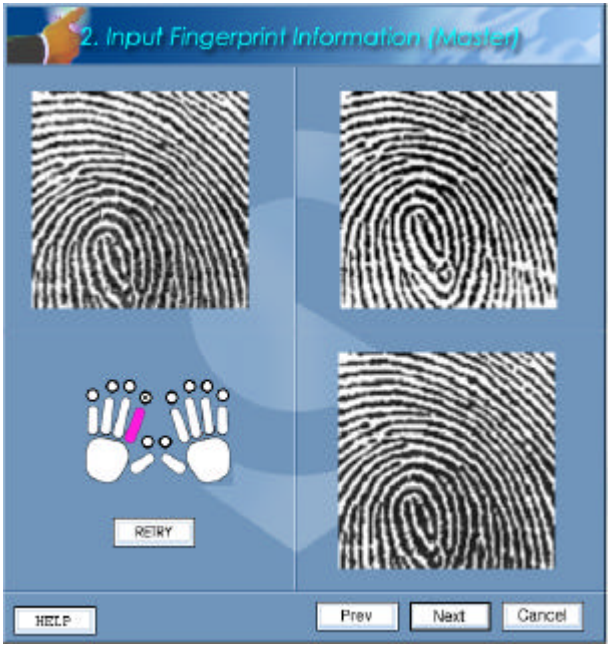


Figure 16) Inputting Administrator's Fingerprint

. After inputting fingerprint 3 times, the input print images appear in Figure 16. Then click Next .

. If you want to register fingerprints again, click RETRY button in figure 16. The screen goes back to Figure 15. You can register again from . in the same procedure.

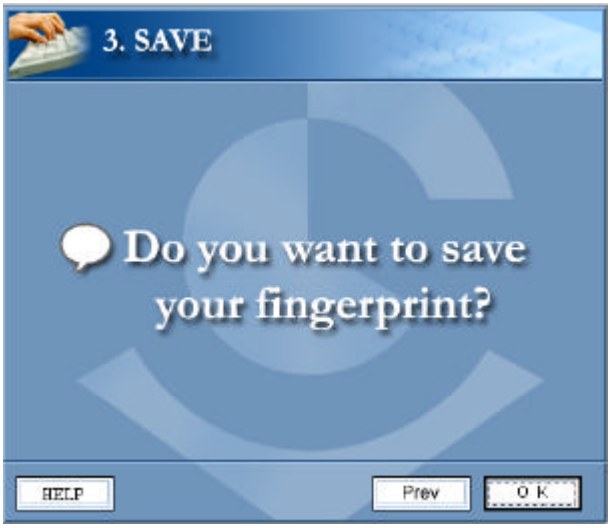


Figure 17) Finishing Inputting Administrator's Fingerprint

. The message of "Registration is successful" is shown, then click O K.

. When the installation is complete, you must reboot your PC for the fingerprint verification properly, you first reboot your PC.

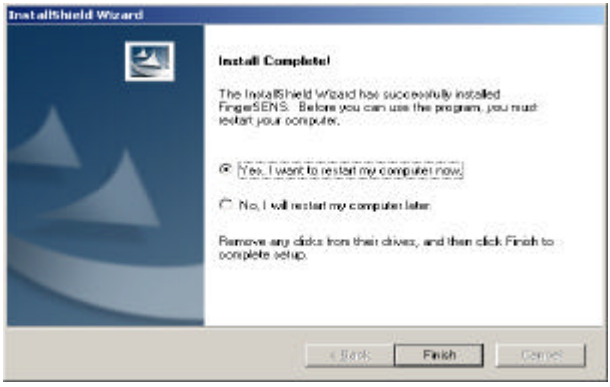


Figure 18-1) Installation Finish Screen

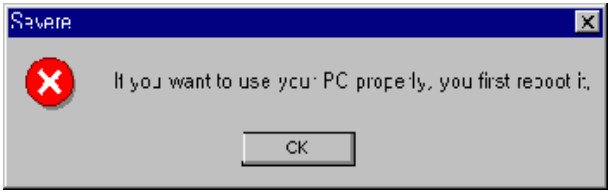


Figure 18-2) Warning Sign (when cancel of rebooting)

. You have to reboot PC to implement the program.

.

2. Uninstalling FingerSENS

2.1 Uninstalling S/W

- Click the Windows'"Start" menu
- In the program menu, choose the "SecuIT", and then click the "Uninstall FingerSENS"

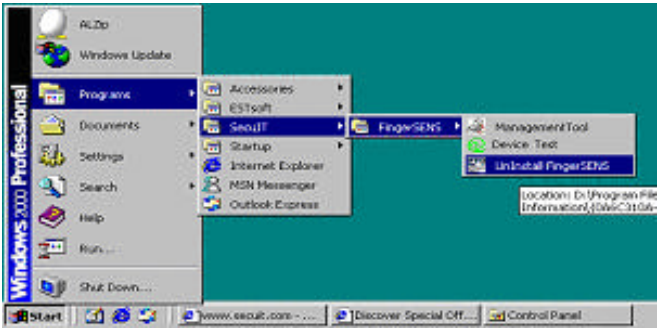


Figure 19) Uninstall FingerSENS

Figure 20) Fingerprint confirmation window

- An administrator among the users has to pass the procedure of

fingerprint recognition to uninstall the program.

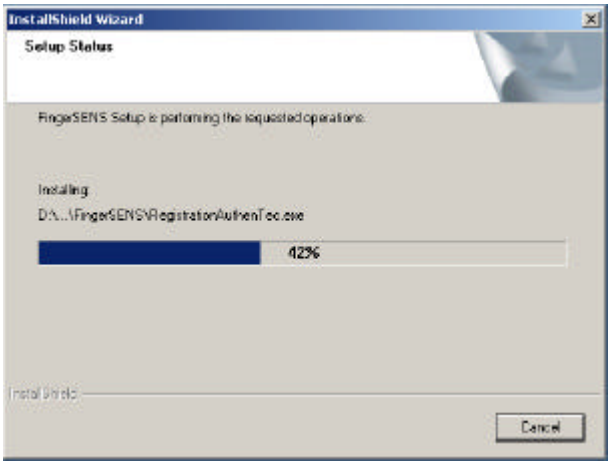


Figure 21) Deleting Program

. The program is deleted as like (Figure 21).

? . How to use FingerSENS

1. Device Test

- Click the Windows' "Start" menu
- In the program menu, choose the "SecuIT", and then click "Device Test"

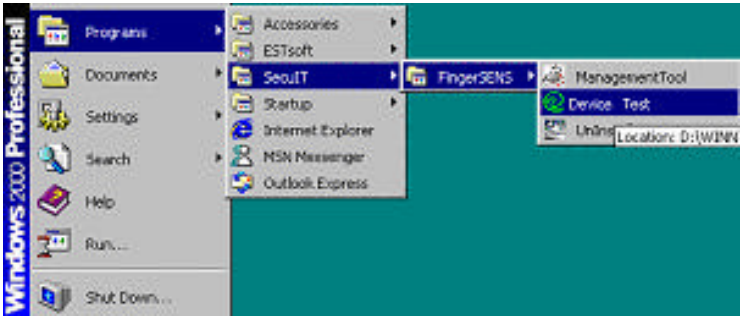


Figure22) Choose "Device Test"

- Put the finger on the FingrSENS, you can verify your fingerprint image in "Device Test"program.

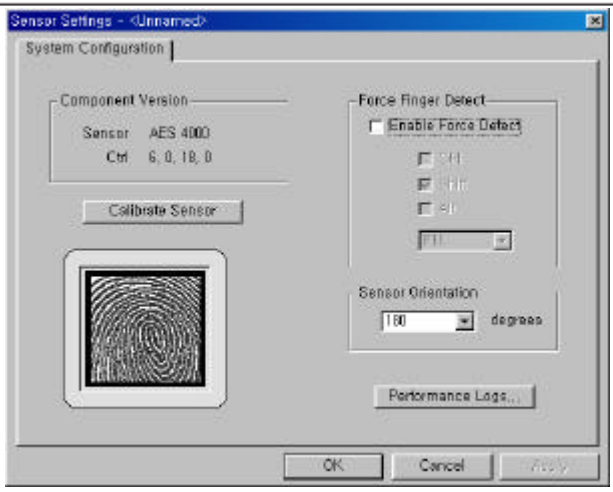


Figure 23) Device Test Program Execution

. If fingerprint doesn't pop-up, it might be the indication that the device doesn't work properly. You should uninstall FingerSENS program, and reinstall hardware and software again. (refer to chapter II)

2. User

2.1 Windows Logon Administration

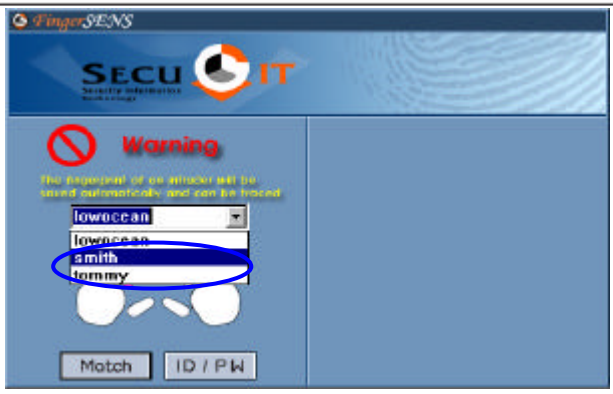


Figure 24) Window Logon

- The User verification window appears when you boot PC after FingerSENS has been installed (Figure 24).
- The User ID registered by the administrator is displayed in the combo box.

> - If there is no enrolled user, there appears administrator ID which was registered at installation and only the administrator can log on to PC in this case.

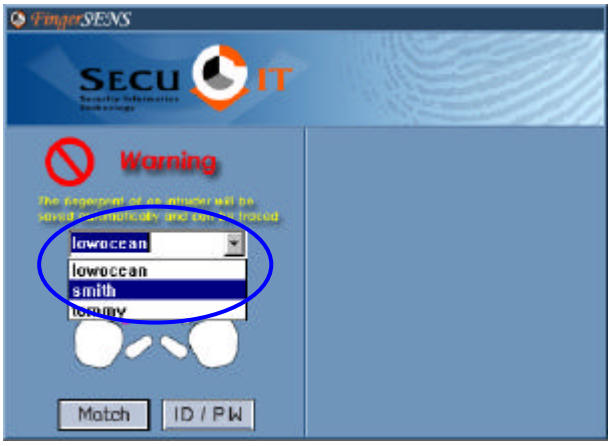


Figure 25) Selection of Logon User

. Click scroll button in the combo then the list of enrollees is shown (Figure 25). Choose an ID by which you want to log on.

. Click MATCH button or ID/PW button.

. In clicking MATCH case

Figure 26-1) Inputting Fingerprint of user

. Upon clicking MATCH, the system is ready to take a selected user's fingerprints.

. User can know if user gets successfully access as soon as user inputs user's fingerprint because the fingerprint images are automatically compared to the ones stored on..

. Upon clicking MATCH, the screen for taking fingerprints is displayed. So you must check first whether "the fingerprint sensor" is connected to PC before you click MATCH.

. If verification succeeds, PC logon is completed. On the other hand, "Not Match !!!" message appears when it fails (Figure 25).

Figure 26-2) Logon Failure

. A user can be verified by inputting fingerprints again. And if another user tries to logon during the process user can do the procedure from . in the same order.

. In clicking ID/PW case

Figure 26-3) Inputting user's ID/PW

. Upon clicking ID/PW button, the system is ready to take a user's ID/PW.

. As soon as user inputs ID/PW, the current inputting ID/PW are compared to the ones stored on.

. If verification succeeds, PC logon is completed. On the other hand, the message as like (Figure 27) appears when it fails.

Figure 27) Logon Failure

. If user's verification fails, you can process the procedure from . again in the same order.

2.2 Screen Saver

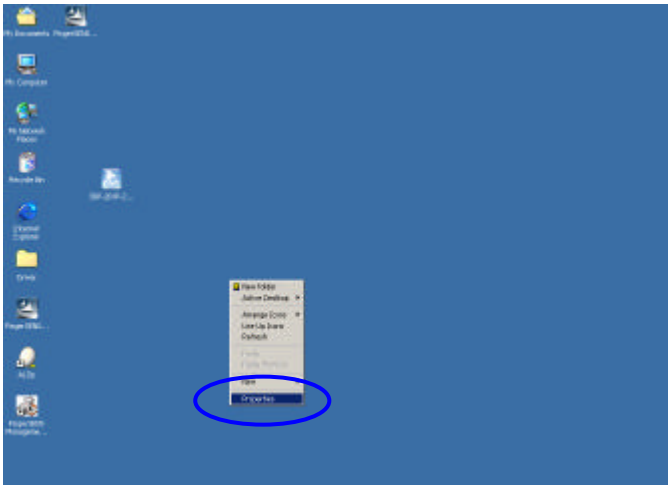


Figure 28) Launching Screen Saver

- To implement "Screen Saver", click the right button of mouse or click the control panel of Windows''Start' menu.
- In a pop-up menu after right-clicking the mouse on the desktop (Figure 28), Choose "Properties".
- Or you can start Screen Saver by choosing "Display" in the "Control Panel".

- **Windows 98**

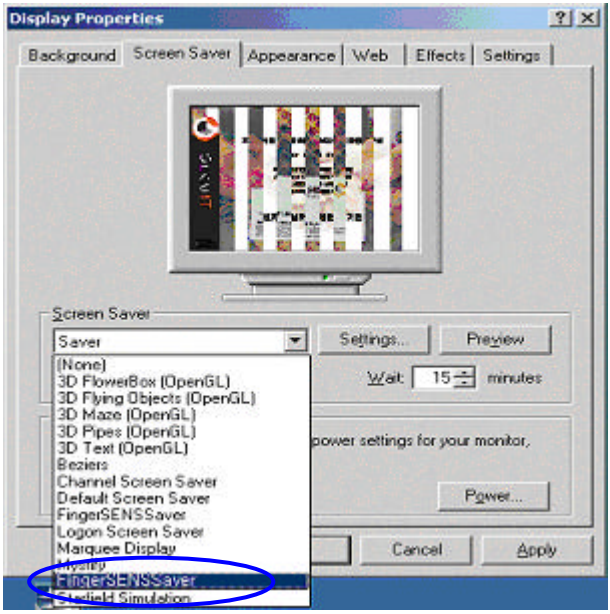


Figure 29) Selecting Screen Saver

. Choose "Screen Saver" in "Display Properties" and then search and choose "FingerSENSSaver" in the combo box.

. If choose "FingerSENSSaver" as Screen Saver, the screen saver as like (Figure 29) is set to activate. Select "Waiting Time" and click [OK].

. **Windows 2000**

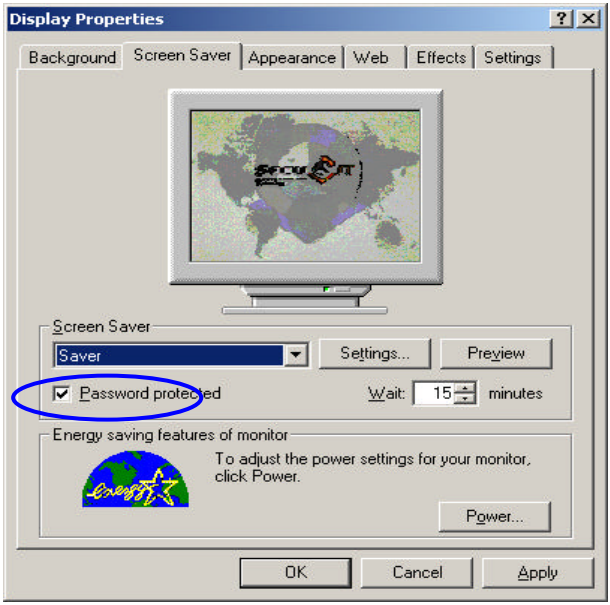


Figure 29-1) Windows 2000 Screen Saver

. You can check the practicing screen saver beforehand by checking [Preview].

. You have to check "Password protected" to work screen saver successfullv in window 2000.

Figure 30) Verification in the Screen Saver

. If you want to clear Screen Saver, just touch mouse or keyboard. Then fingerprint input screen for verification is displayed (Figure 29).

. When the input fingerprint and the registered fingerprint match, the screen saver will be cleared.

. If they don't match, Screen Saver is on again.

. When you click ID/PW button, it's proceeds is just same as like clicking ID/PW button in windows logon administration.

2.3 Screen Lock

2.3.1 Windows 2000

. If a user press CTL+ALT+DEL, (Figure 31) appears.

Figure 31) Selecting Screen Lock

. Screen is locked when a user chooses 'Computer Lock' button.

Figure 32) Screen Lock

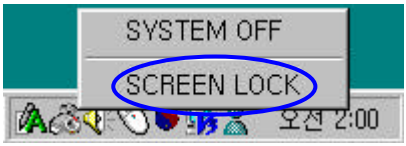
. If a user press CTL+ALT+DEL again, the screen for verification appears. If verification succeeds, the screen lock will be cleared.

Figure 33) Fingerprint Verification Screen

2.3.2 Windows 98

. Right-clicking the mouse on the tray icon.

. Choose SCREEN LOCK in pop-up menu.



. If you want to implement "Screen Lock" in windows 98, you have to choose "FingerSENSSaver" provided by FingerSENS in Screen Saver.

2.4. Encryption & Decryption of File and Folder

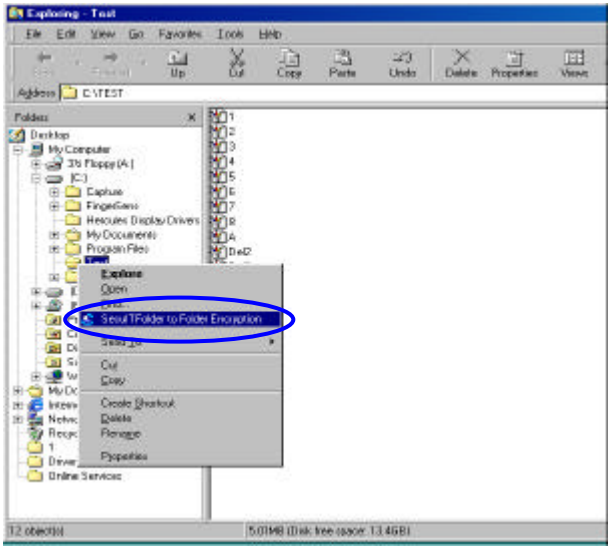
This function is to protect the personal information and important information by unauthorized persons as encrypting file and folder user wanted and restricting the access of them. If you want to access the encrypted file and

folder, you have to verify your fingerprint through fingerprint recognition system.

As providing the same interface like Windows Search, you can use it by clicking mouse.

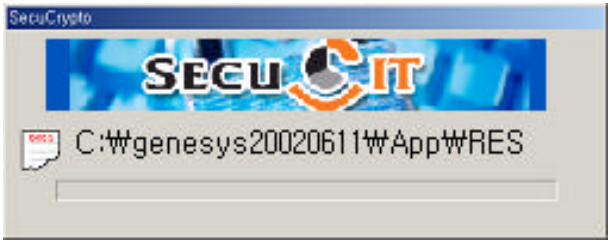
2.4.1 Folder Encryption

- Implement Windows search.
- Select folder you want to encrypt, select [SecuITFolder to Folder Encryption] by clicking right button in mouse.

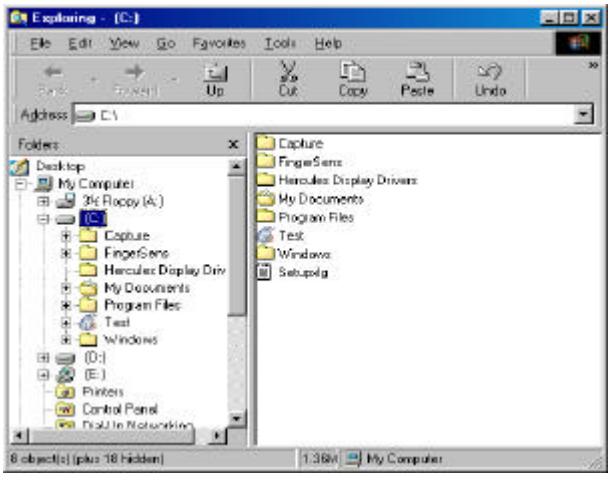


. Confirm your fingerprint in the screen.

. If matching between the input fingerprint and registered one, it executes folder encryption automatically.



. If complete folder encryption, the icon of encrypted folder and files are changed.



. As like the folder of system, Windows and program which is related with System directly and my document and waste bucket etc. these don't encrypt.

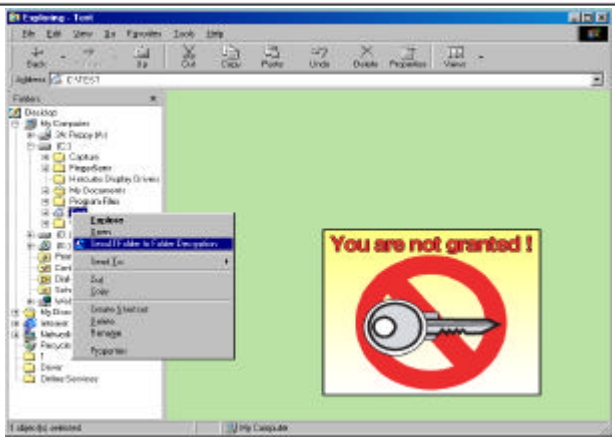
. The files of system and related FingerSENS program don't encrypt. If change these files, it occurs fatal error in the system.

. When encrypt the files related with implementation of program as "exe" and "dll". These programs don't execute regularly. Please be noticed.

2.4.2 Decryption of File and Folder

- Implement Windows Search.
- Upon selecting encrypted folder, the screen of fingerprint confirmation appears.

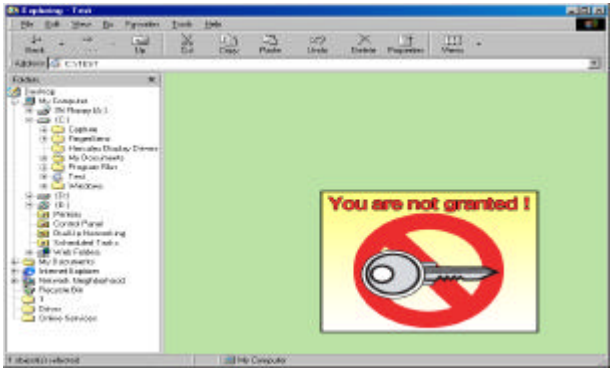
- After selecting the encrypted folder, choose [SecuITFolder to Folder Decryption] by right-clicking in mouse.



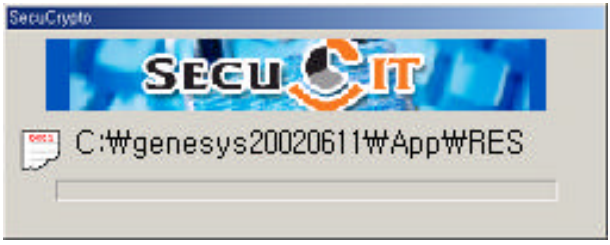
、 Confirm your fingerprint in the screen.

、 If verification success, you can see files. But if verification failure,

you can't see anything.



. When matching between input fingerprint and encrypted one, it executes folder decryption automatically.

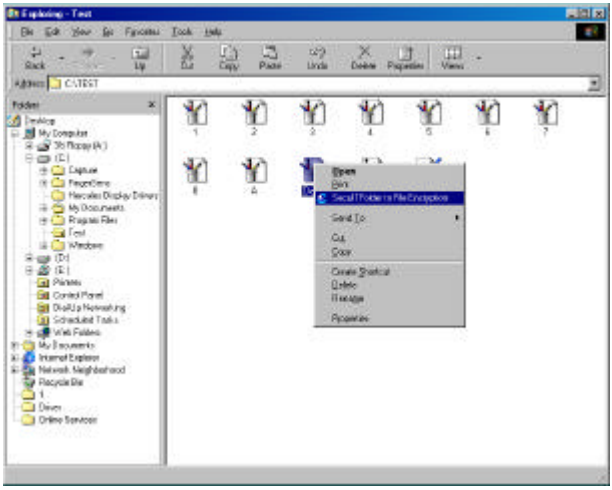


. As completion of folder encryption, the icon of encrypted folder and files change to the existing icon. File expander also changes to the existing one.

2.4.3 File Encryption

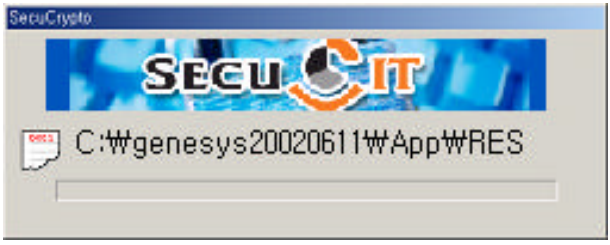
. Implement Windows Search..

. After selecting the file you want to encrypt, choose and right0clicking [SecuIT File Protection] and press [Encryption].



. Confirm your fingerprint in the screen.

. When matching between input fingerprint and logon user, it executes file encryption automatically.

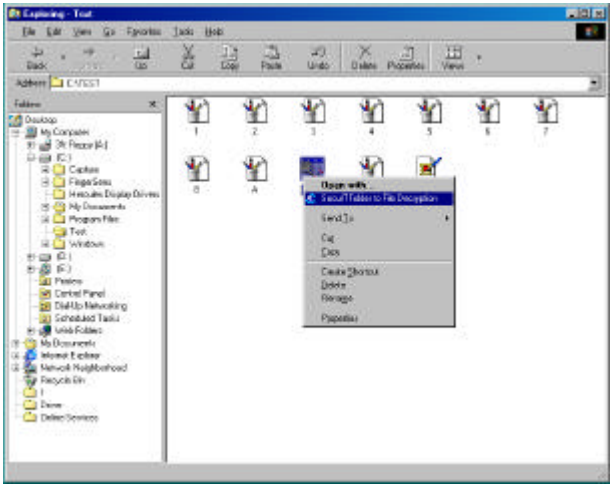


. As completion of file encryption, the icon of encrypted file is changed.

2.4.4 Decryption of file

. Implement Windows Search.

. After selecting the file you want to decrypt, right-clicking and choose [SecuIT File Protection] and then press [Decryption] button.



. Confirm your fingerprint in the screen.