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- (71) Applicant (for all designated States except US): TRINITY FUTURE-IN PVT. LTD, [IN/IN]; 3rd Floor, St Patrick's Complex, Brigade Road, Bangalore 560 025 (IN).

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- (72) Inventor; and
- (75) Inventor/Applicant (for US only): GEORGE, John, Thekkethil [IN/IN]; P/48 (B-270) Anugraha, Pipe Line, Jalahalli P.O, Bangalore 560 013 (IN).
- (74) Agent: RAMASARMA, A., V., S.; Kochhar & Co, Suite #503, Sigma Wing, 5th Floor, Raheja Towers, #177, Anna Salai, Chennai 600 002, Tamil Nadu (IN).
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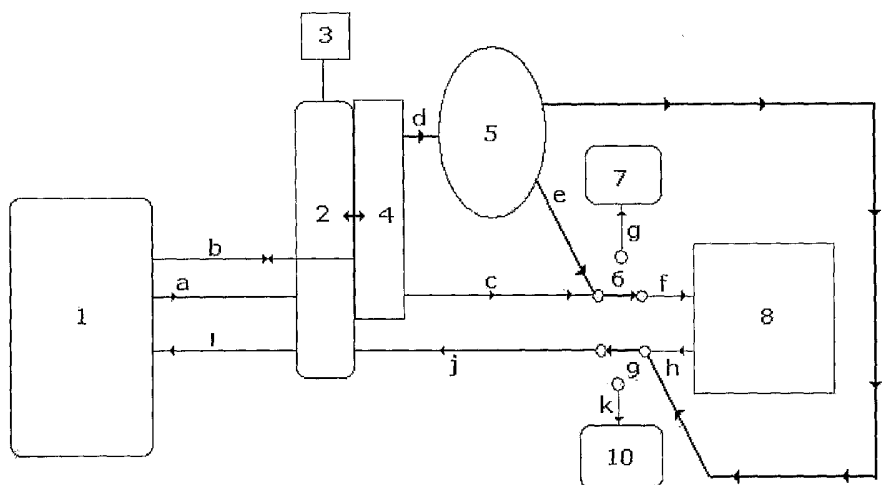
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(54) Title: AN ELECTRO - MECHANICAL SYSTEM FOR NON - DUPLICATION OF OPERATING SYSTEM



(57) Abstract: An electromechanical system consists of a memory storage unit in which the licensed operating system is stored. The function of this device is to recognize the requested data and thereby allow the operating system from the memory storage unit according to the instructions set to this device. It is an effective means for protecting the operating system in the device from non-duplication. The operating system present in the memory storage unit is constructed as license specific.

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TITLE: AN ELECTRO – MECHANICAL SYSTEM FOR NON – DUPLICATION OF OPERATING SYSTEM

FIELD OF THE INVENTION:

The present invention generally relates to an electronic system for non – duplication of Operating system. More particularly the present invention provides an electromechanical system useful for preventing copying of operating system into the computer. The present invention provides an electromechanical system for the installation of operating system to a computer without the need for a CD.

The present invention provides a MEMS (Micro Electro Mechanical System) based chip useful for Non-Duplication of operating systems to be installed onto a computer.

BACKGROUND ART:

Operating system is one of the most valuable technologies of the Information Age, running everything from PCs to the Internet. Yet, because operating system has become such an important productivity tool, the illegal duplication and distribution of operating system persists globally. Operating system is important to every business, government, school and consumers.

Most retail programs are licensed for use at just one computer site or for use by only one user at any time. By buying the operating system, the user becomes a licensed consumer rather than an owner. The user is allowed to make copies of the program for backup purposes, but it is against the law to give copies to friends and colleagues.

Unauthorized copying/ installation of Operating system is all but impossible to stop, although operating system companies are launching more and more lawsuits against major infractors. Originally, operating system companies tried to stop unauthorized use of operating system by copy-protecting their operating system. This strategy failed, however, because it was inconvenient for users and was not 100 percent foolproof. Most operating system now requires some sort of registration, which may discourage would-be pirates, but doesn't really stop unauthorized usage of operating system.

Reference may be made to the US Publication No. 2005 0216685 A1 Heden, Donald Gene; et al, wherein it has been disclosed that: - The Intelligent Media Storage System disclosed herein protects computer programs and/or data files from being copied and used in an unauthorized manner. According to an example embodiment of the invention, an Intelligent Control Element (ICE) is installed between a computer system and a mass storage device. In a preferred embodiment, the ICE is disposed between a media storage device interface and the computer system interface. The ICE is responsible for writing data to and reading data from the protected mass storage devices of the IMSS. The ICE writes to and reads from the mass storage devices using special coding and encryption mechanisms. Each IMSS ICE uses different keys to code and encrypt data stored onto the mass storage device. Protected data is prepared for installation on an individual IMSS installed in one specific computer system, which is not usable by any other computer system (even when that other computer system is also equipped with another IMSS). In some embodiments, the mass storage interfaces are partitioned into separate protected and unprotected mass storage interfaces. In embodiments where associated interfaces are partitioned,

the unprotected mass storage interfaces are controlled either directly by the system, or indirectly (as logical mass storage interfaces) by the ICE. In contrast, the protected mass storage interfaces are always physically restricted from being directly accessible from the system interface, and are generally controlled only by the ICE. In other embodiments, coding and encryption by the ICE of data stored onto protected mass storage connected to the IMSS provides another level of protection. The interface protocol implemented by the ICE is proprietary and is licensed only to operating system manufacturers and distributors, which provides yet another level of protection. The use of standard mass storage read commands (i.e., non-IMSS ICE read commands) upon hard drives and devices written to by an IMSS will cause only coded and encrypted data from the protected mass storage device to be read. Although backup copies of the protected (i.e., coded and/or encrypted) files may be made, such copies are useless for any other purpose, as they will contain the coded/encrypted data that only the originating IMSS can decode or decipher. Thus, copies of protected programs and/or data files made for legitimate backup purposes cannot be used for any other purpose.

Here we can see that the data file access in IMSS (Intelligent Media Storage System) is allowed through authentication code system operating through ICE (Intelligent Control Element). ICE (Intelligent Control Element) could be attached along with Hard Drive, CD, DVD Flash Drive Etc. The Main drawback of this invention is, it allows read or write file creation, data coding, copying, deleting and encryption of files from IMSS (Intelligent Media Storage System) like any other conventional storage media. Secondly this invention works mostly only on operating system security with minimal use of hardware security.

OBJECT OF THE INVENTION:

It is thus the main object of the present invention is to provide an electromechanical system for Non-Duplication of Operating systems, which obviates the drawbacks of the prior art.

Main object of our present invention is to provide an electronic system for Non-Duplication of Operating systems, which obviates the drawbacks of the prior art.

Another object of the present invention is to provide an electromechanical system for Non-Duplication of Operating systems useful for preventing copying of files of the operating system to be installed in any computer.

Another object of the present invention is to provide an electronic system for Non-Duplication of Operating systems useful for preventing copying of files of the operating system to be installed in any computer.

Still another object of the present invention is to provide an electromechanical system for Non-Duplication of Operating system, by capturing the hardware specification of the computer for the number of licenses specified by the licensor of the Operating system.

Still another object of the present invention is to provide an electronic system for Non-Duplication of Operating system, by capturing the hardware specification of the computer for the number of licenses specified by the licensor of the Operating system.

A still further object of the present invention is to provide a MEMS based chip for Non-Duplication of Operating systems.

An object of the present invention is to provide a MEMS based chip useful for installation in a computer.

Yet another object of the present invention is to provide a MEMS based chip for installation in a desktop computer.

Still another object of the present invention is to provide a MEMS based chip for installation in a laptop.

Yet another object of the present invention is to provide a MEMS based chip for installation in a notebook.

Yet another object of the present invention is to provide a MEMS based chip for installation in a PDA.

Still further object of the present invention is to provide an electromechanical/electronic system useful for preventing the unauthorized installation of licensed operating system to a desktop computer.

Yet further object of the present invention is to provide an electromechanical/electronic system useful for preventing the unauthorized installation of licensed operating system to a laptop computer.

Yet another object of the present invention is to provide an electromechanical/electronic system useful for preventing the unauthorized installation of licensed operating system to a notebook.

Yet another object of the present invention is to provide an electromechanical/electronic system useful for preventing the unauthorized installation of licensed operating system to a PDA.

Another object of the present invention is to provide an electromechanical/electronic system useful for preventing copying of operating system files on to a desktop computer.

Still other object of the present invention is to provide an electromechanical/electronic system useful for preventing copying of operating system files on to a laptop computer.

Yet another object of the present invention is to provide an electromechanical/electronic system useful for preventing copying of operating system files on to a notebook computer.

Yet another object of the present invention is to provide an electromechanical/electronic system useful for preventing copying of operating system files on to a PDA.

SUMMARY OF THE INVENTION:

The present invention prevents copying of licensed operating system into the computer. The electromechanical system can be miniaturized to a MEMS configuration. This electromechanical system is mounted on host system, in which the operating system presents in the external memory to be installed on to the computer. This electromechanical system can replace the CDs for installation / reinstallation of operating system.

Also, there is an application programme stored in the hardware specification storage unit of the device that gathers the host information of the Ethernet card.

Thus according to the basic aspects of the present invention provides an electromechanical system for non - duplication of operating system comprises of:

a host system is one in which the system can request and receive the operating system installer file from the operating system storage zone;

the processor which compares the instructions from the instruction zone is the hardware specification storage unit of the system which is integrated on a MEMs chip;

the operating system storage zone is a memory flash, a memory flash card, a hard disk, a eeprom, a eeeprom, a RAM, a disc on chip.

At the non – duplicated request the operating system storage zone sends the operating system to the host system through the processor;

The above method of the present invention is adapted for non-duplication of operating system. The device comprise of a processor, controller instruction unit, switches and the hardware specification storage unit or zone, which will be integrated in a MEMS (Micro Electro Mechanical System) Chip.

Additional details of the above – described method for creating and using the electromechanical system for non – duplication of operating system are provided below:

BRIEF DESCRIPTION OF THE DRAWINGS:

Fig 1 shows an embodiment of the electromechanical system containing operating system for installation into a host system such as a computer, desktop, laptop, notebook and the like. (1) The host system is one in which the system can request and receive the operating system installer

file from the operating system storage zone (8). (2) is the processor, which compare the instructions from the instruction zone (3). (4) is the hardware specification storage unit of the system. (5) is the controller that controls the switch (6) and switch (9) by the signal (e) and signal (i). Operating system is stored in operating system storage zone (8). There is no-information present in zone (7) and zone (10).

Accordingly the present invention provides a licensed operating system in an electromechanical system loadable without a CD, which comprises: a processor (2) receiving the request data (a) from the host system (1). The processor (2) compares the instructions from the instruction zone (3) and processes the requesting data (a) accordingly. During the time of processing the requested data, the (4) hardware specification storage unit requests the hardware key of the host system (1) with a request command (b). Hardware specification storage unit (4) gathers and stores the hardware key form the host system (1) of the licensee. The processed signal (d) is sent to the controller (5) and the processed data (c) is sent to the switch (6) that is controlled by the controller (5). The controller (5) thereby sends the processed signal to the switch (6). If the requested data (a) is to duplicate the operating system present in the operating system storage zone (8) the switch (6) switches to the no-information zone (7). If the requested data (a) is correct or non-duplicable of the operating system present in the operating system storage zone (8) then the switch (6) switches directly into the operating system storage zone (8). According to non-duplicated request the operating system storage zone (8) sends data back to the host system (1) through the processor (2). During the transfer of the operating system to the host system (1), if the processor (2) understands if another duplication request is requested to the processor (2) then the processor (2) sends a signal (d) to the

controller (5) to turn OFF the switch (9) to a no-information zone (10) by the signal (i) from the controller (5) whereas the non-duplicated request would be allowed directly through the channel (l) into the host system (1) from the processor (2).

In an embodiment of the present invention the known operating system may be such any licensed operating system.

In still another embodiment of the present invention the system may be such as a computer.

In yet another embodiment of the present invention the computer may be such as a desktop, a laptop, a notebook, a PDA.

According to the invention, the electromechanical/electronic means functions as per the following steps:

- a. The electromechanical system is mounted on a host system (1) - computer, wherein the computer may be a desktop, a laptop, a notebook, or a PDA.
- b. The host system (1) sends a request data (a) to the processor (2).
- c. The processor (2) compares the requested data with the instructions from the instruction zone (3).
- d. The processed signal (d) is sent to the controller (5).
- e. The controller (5) thereby sends the controlled signal (e) to the switch (6) to control the switch (6) in which the processed data (c) reach switch (6) from processor (2).
- f. If the requested data (a) is to duplicate the audio file present in the operating system storage zone (8) the switch (6) switches to the no-information zone (7).

- g. If the requested data (a) is correct or non-duplicable of the operating system present in the operating system storage zone (8) then the switch (6) switches directly into the operating system storage zone (8).
- h. According to non-duplicated request the operating system storage zone (8) sends data back to the host system (1) through the processor (2).
- i. During the transfer of the operating system to the host system (1), if the processor (2) understands if another duplication request is requested to the processor (2) then the processor (2) sends a signal (d) to the controller (5) to turn OFF the switch (9) to a no-information zone (10) by the signal (i) from the controller (5).
- j. The non-duplicated request would be allowed directly through the signal (l) into the host system from the processor (2).
- k. Hardware specification storage unit (4) gathers and stores the hardware key form the host system (1) of the licensee by using the signal (b).

The following example is given by way of illustration only and should not be construed to limit the scope of the invention.

EXAMPLE-1

An operating system was stored in the external memory of the device. Here the computer is the host system in which the operating system has to be installed. The computer allow only "Enter" keyboard button to access the operating system present in the external memory to be installed on to the computer, any other button or instructions from the keyboard generates "invalid button clicked" option on to the display thereby protecting the operating system present in the device. Hence

duplication / coping of this operating system is negated. Also, there is an application programme stored in the hardware specification storage unit of the device that gathers the host information of the Ethernet card.

Following are the major advantages:

1. The electromechanical system of the present invention prevents copying of licensed operating system to a computer.
2. The system can be miniaturized to a chip configuration.
3. The electromechanical system integrated into a chip can be operated easily on any desktop, laptop, notebook and the like.
4. The electromechanical system can replace the CDs for installation/reinstallation of operating system.
5. The number of installations can be prefixed by the licenser according to market needs.

Claims:

1) An electro-mechanical system for non-duplication of operating system, which comprises: - (1) The host system is one in which the system can request and receive the operating system installer file from the operating system storage zone (8). (2) is the processor, which compare the instructions from the instruction zone (3). (4) is the hardware specification storage unit of the system. (5) is the controller that controls the switch (6) and switch (9) by the signal (e) and signal (i). Operating system is stored in operating system storage zone (8). There is no-information present in zone (7) and zone (10).

2) An electro-mechanical system as claimed in claim (1), wherein the device comprises of a processor, controller, instruction unit, switches and the storage unit or zone, hardware specification storage unit, which is integrated on a card.

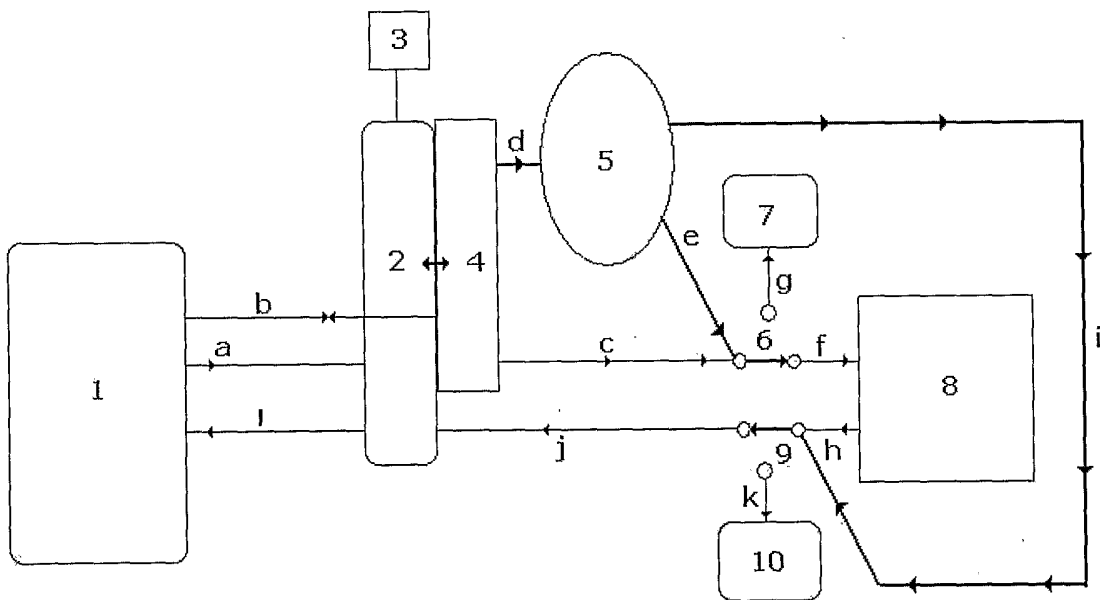
3) An electro-mechanical system as claimed in claim (1) and (2), wherein the device comprises of a processor, controller, instruction unit, switches and the storage unit or zone, hardware specification storage unit, which is integrated on a electronic chip.

4) An electro-mechanical system as claimed in claim (1) to (3), wherein the device comprises of a processor, controller, instruction unit, switches and the storage unit or zone, hardware specification storage unit, which is integrated on a MEMS (Micro Electro Mechanical System) chip.

5) An electro-mechanical system as claimed in claim (1) to (4), wherein the input data is from the means such as operating system developers.

6) An electro-mechanical system as claimed in claim (1) to (5), wherein the host system is a computer, a laptop, a desk top, a notebook, a device with digital external interface.

7) An electro-mechanical system as claimed in claim (1) to (6), wherein the operating system storage zone is a Memory Flash, a memory flash card, a Hard disk, a eprom, a eeprom, a RAM, a disc on chip



INTERNATIONAL SEARCH REPORT

International application No.
PCT/IN 2006/000123

A. CLASSIFICATION OF SUBJECT MATTER IPC⁸: G06F 12/14 (2006.01) According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC⁸: G06F, G11B, H04L Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched ---- Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) WPI, EPODOC, TXTDE, TXTEN, INSPEC, NPL		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 591 367 B1 (KOBATA ET AL.) 8 July 2003 (08.07.2003) <i>the whole document</i>	1-7
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A	JP 2003/208234 A (NEC SAITAMA LTD) 25 July 2003 (25.07.2003) <i>abstract, figure 1</i>	1-7
	--	
A	US 2002/0056031 A1 (SKIBA ET AL.) 9 May 2002 (09.05.2002) <i>abstract, figure 6 and its associated description, paragraphs 2-63, claims</i>	1-7
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<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 8 August 2006 (08.08.2006)		Date of mailing of the international search report 25 August 2006 (25.08.2006)
Name and mailing address of the ISA/ AT Austrian Patent Office Dresdner Straße 87, A-1200 Vienna Facsimile No. +43 / 1 / 534 24 / 535		Authorized officer KÖGL C. Telephone No. +43 / 1 / 534 24 / 440

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International application No.
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 634 807 A (CHORLEY ET AL.) 6 January 1987 (06.01.1987) <i>abstract, figure 1 and its associated description, column 1, line 4 - column 3, line 67, claims</i>	1-7
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A	WO 2004/051390 A2 (THOMSON LICENSING S.A) 17 June 2004 (17.06.2004) <i>the whole document</i>	1-7
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A	EP 0 062 438 A2 (FUJITSU LIMITED) 13 October 1982 (13.10.1982) <i>abstract, figures 1, 2 and their associated descriptions, page 1, line 1 to page 2, line 9, claims</i>	1-7
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A	US 2005/0216685 A1 (HEDEN ET AL.) 29 September 2005 (29.09.2005) <i>the whole document</i>	1-7

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
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