MAINTENANCE COURSE

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- **Backup & Restore**

- **Mandatory-replacement**

- **Troubleshooting**

CENTUM VP

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Backup & Restore

It is recommended to backup the system periodically as a precaution in case the system fails.

1. Key code [each station]
2. Project Backup
3. System registry
4. Centum VP folder
5. All driver

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1. Key Code backup

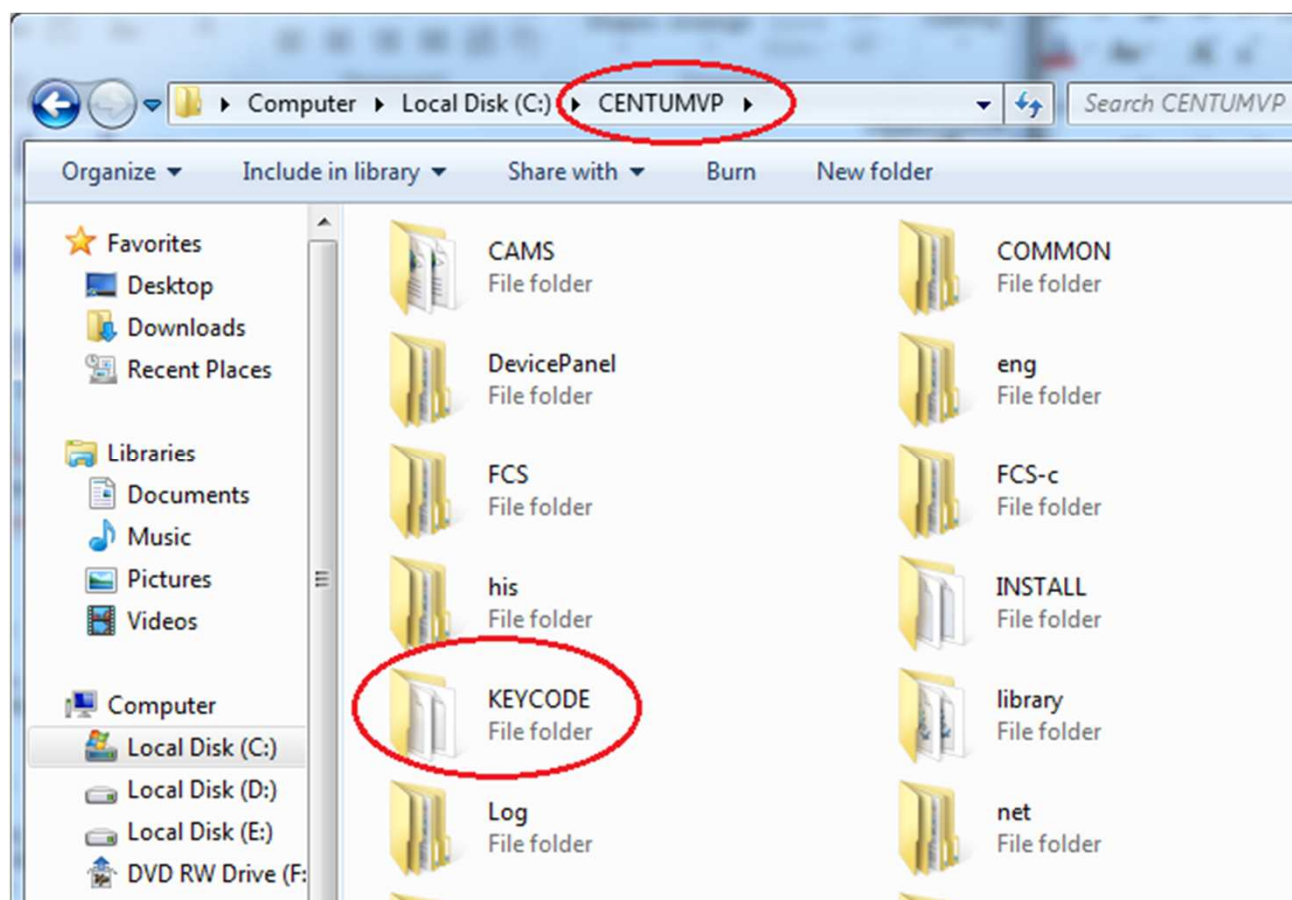## 1.1 Create Key Code FD from System Configuration viewer

Start menu – All program – Yokogawa Centum – Software Configuration Viewer
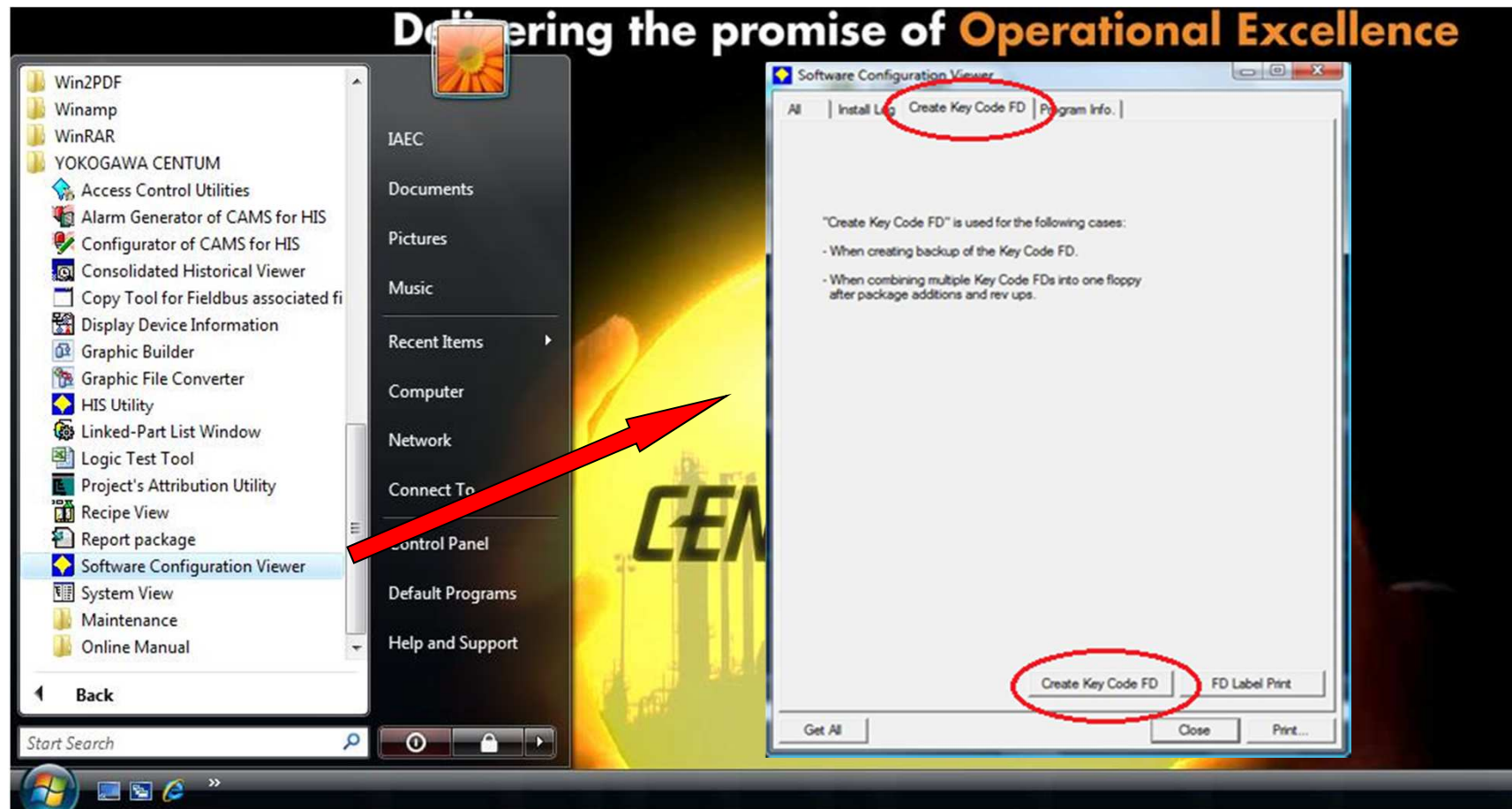
1. Key Code backup

1.2 Copy folder KEYCODE

Backup Procedures

Backup

It is recommended to backup the system periodically as a precaution in case the systemfails. The files listed in the table below should be regularly backed up:

Contents	Folder	Registry	Remarks
Windows files for installation, bootup, shutdown.	All Hard disk	Entire registry	Back up the folder after exiting all applications including the Operation and Monitoring.
CENTUM VP engineering data	Project folders	–	Back up the folder after exiting the System View.
CENTUM VP database for operation & monitoring function	Every function folder such as Report, PICOT, etc	–	–

The backups of CENTUM VP and project folders are actually file-backups.
They can thus be copied to a external storage media using the Explorer,
or commercial backup software may be used.

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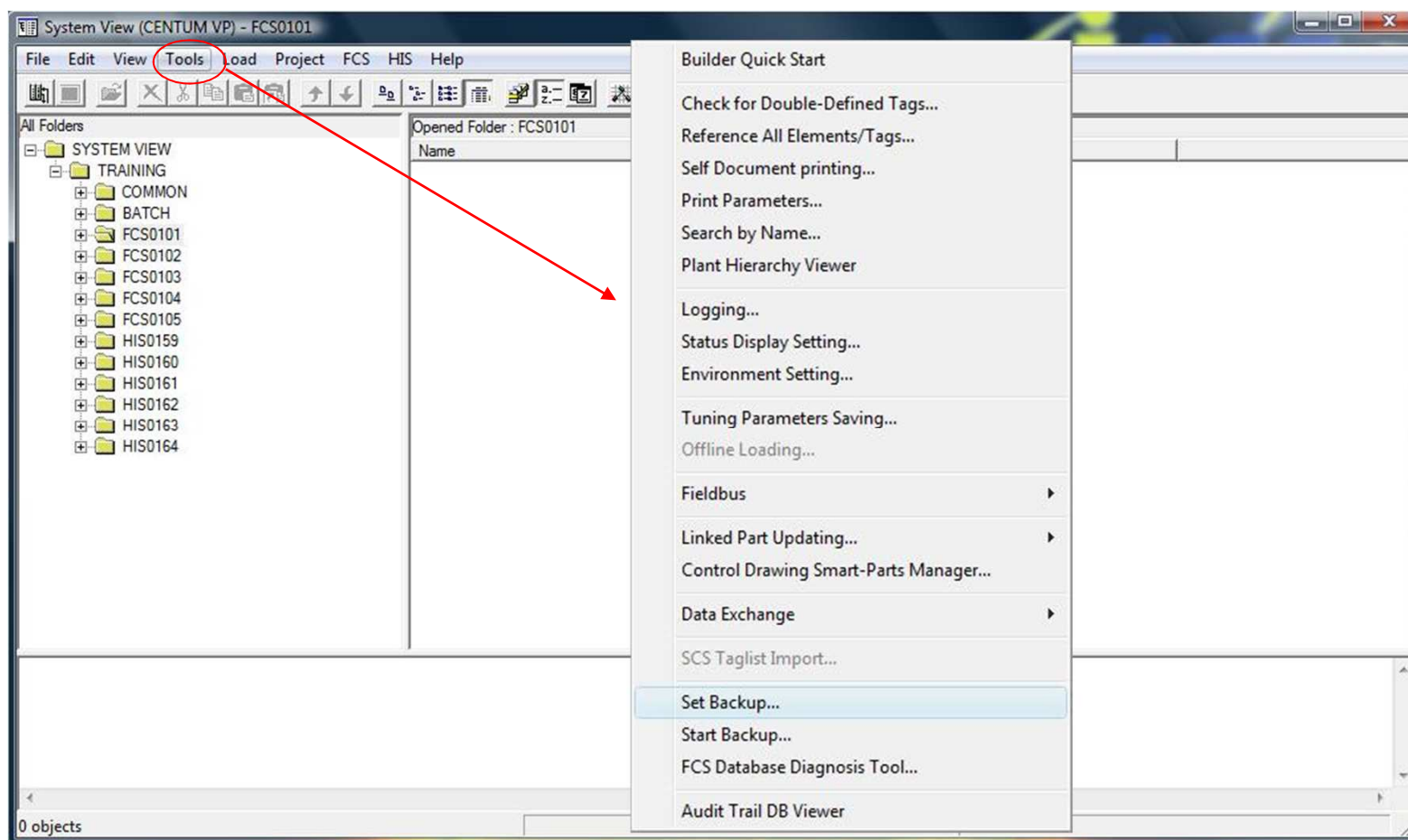۰۹۱۲۳۱۸۲۷۳۴

Project Folder Backup

Make sure to back up the project after engineering operation.
Project folders can be backed up as described below:

1. Backup from System View

2. Backup from Maintenance Menu

3. Backup from Project Folder

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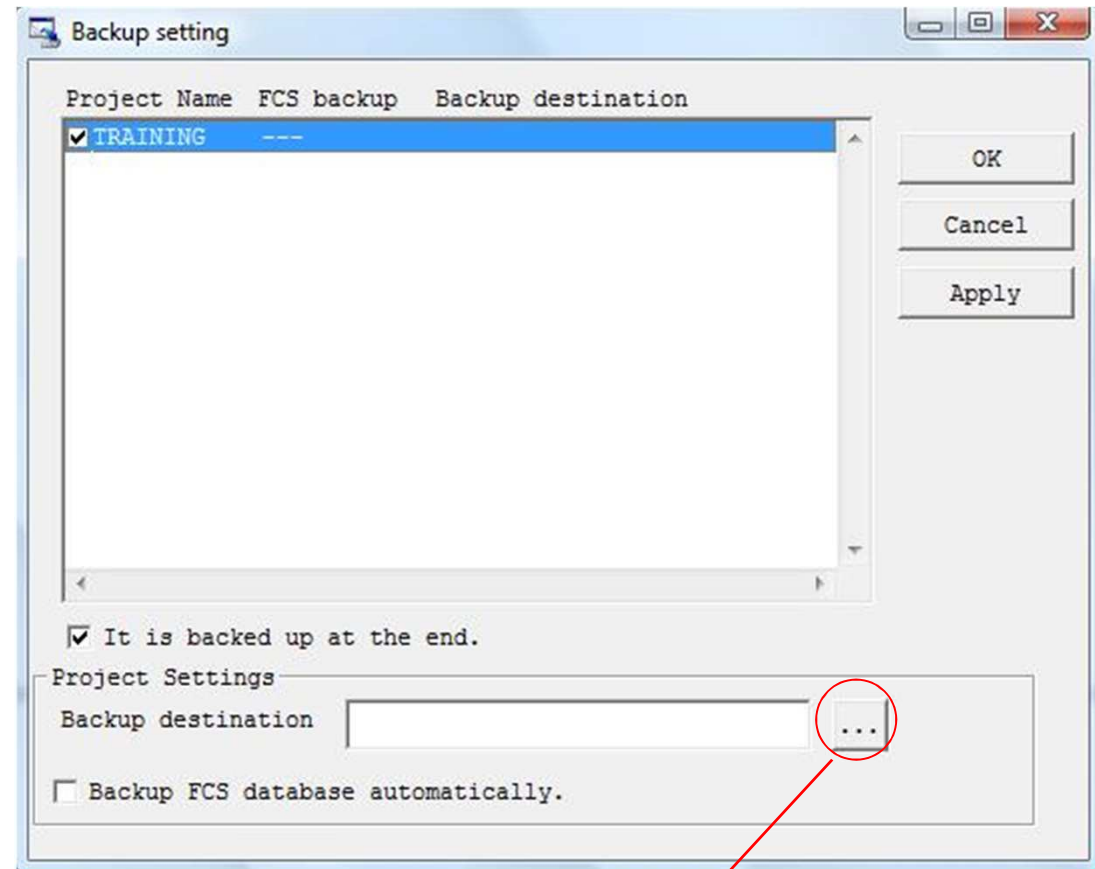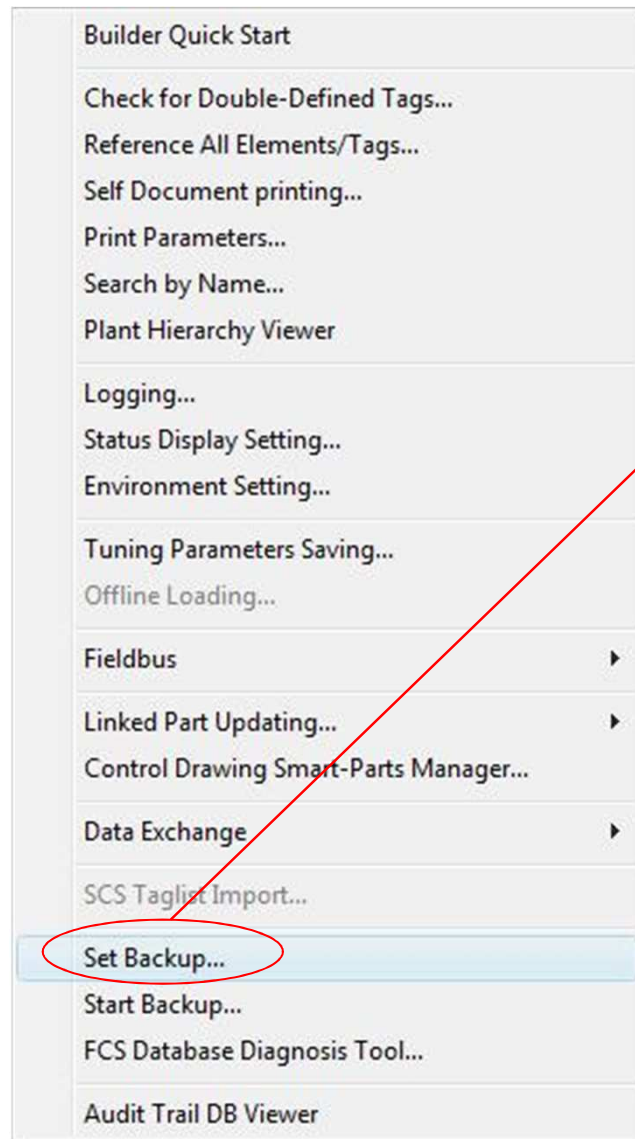۰۹۱۲۳۱۸۲۷۳۴

2. Project Backup

2.1 Backup from System View

Backup a project cab carried out by Choosing [Set Backup..] or [Start Backup..] from [Tools] menu of System View.

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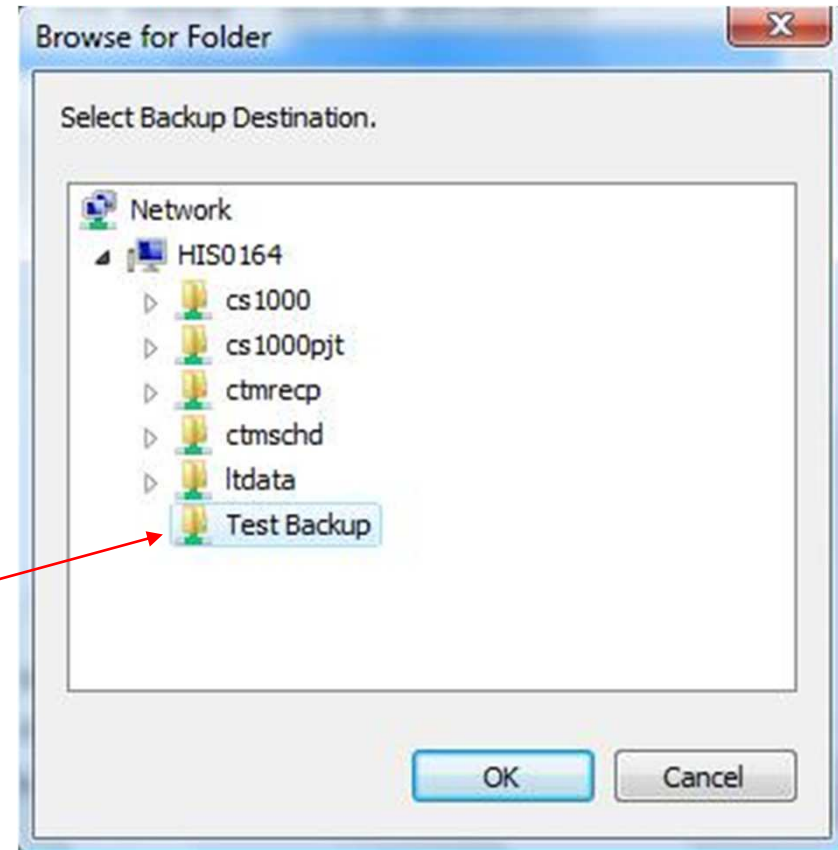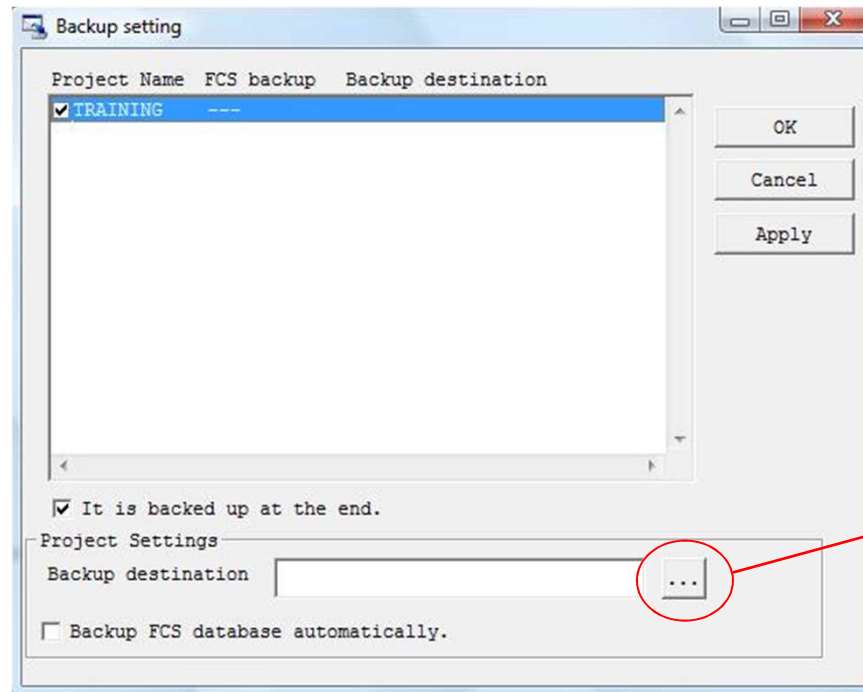
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2. *Project Backup*

Click button for select folder for project backup (must to shearing this folder).

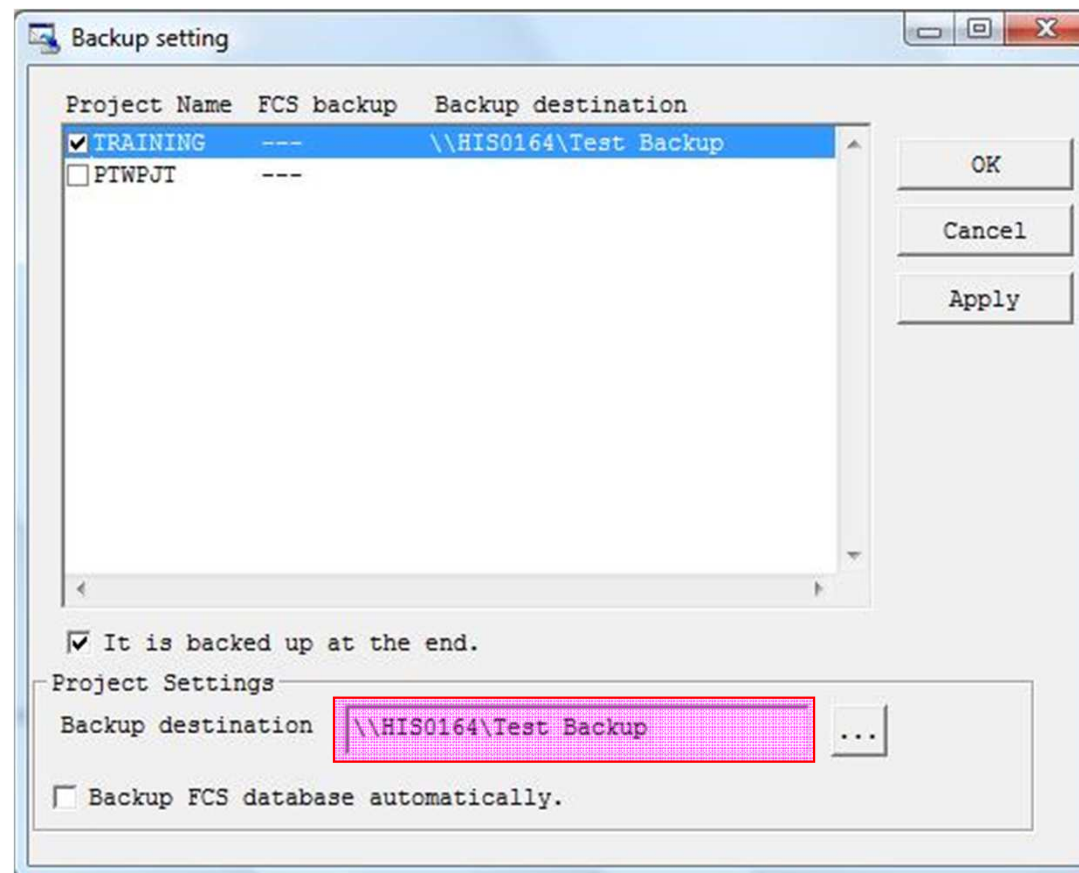# 2. Project Backup

Click button for select folder for project backup (must to shearing this folder).
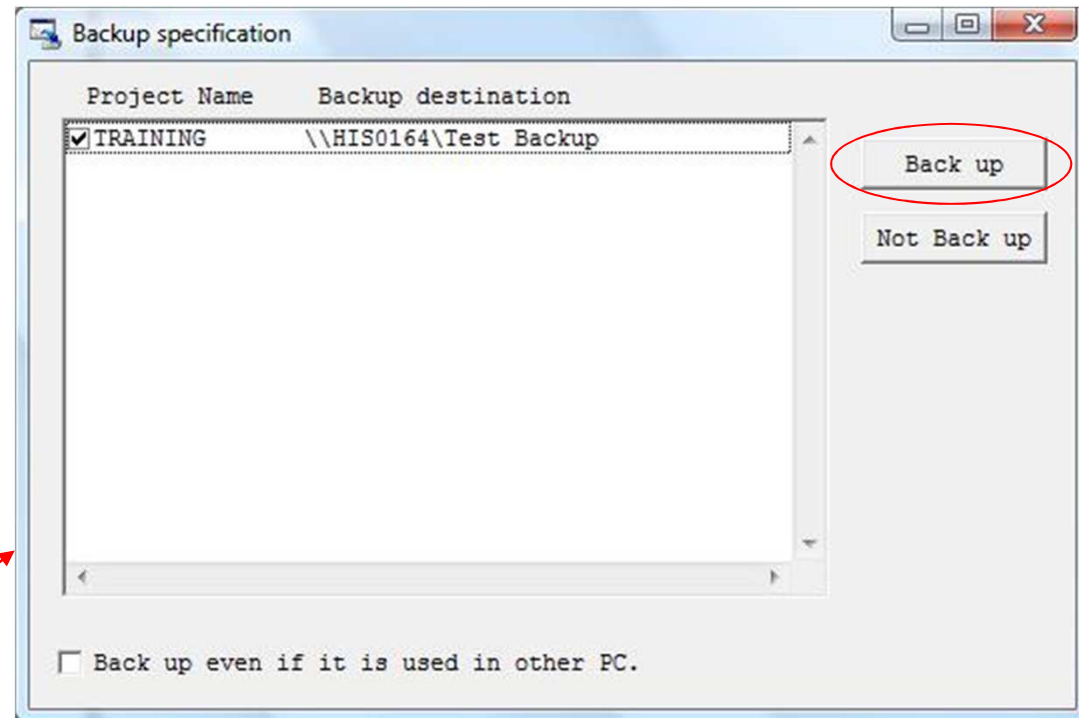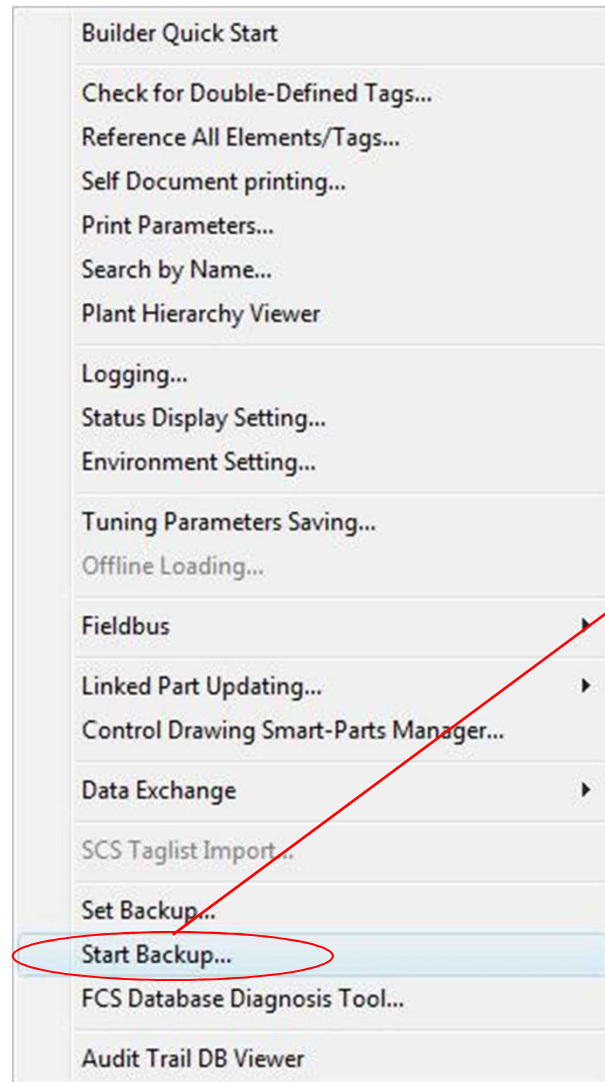
When backup setting finished.

2. Project Backup

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Start Backup

| Builder Quick Start |
| Check for Double-Defined Tags... |
| Reference All Elements/Tags... |
| Self Document printing... |
| Print Parameters... |
| Search by Name... |
| Plant Hierarchy Viewer |
| Logging... |
| Status Display Setting... |
| Environment Setting... |
| Tuning Parameters Saving... |
| Offline Loading... |
| Fieldbus |
| Linked Part Updating... |
| Control Drawing Smart-Parts Manager... |
| Data Exchange |
| SCS Taglist Import... |
| Set Backup... |
| Start Backup... |
| FCS Database Diagnosis Tool... |
| Audit Trail DB Viewer |

Backup specification

Project Name   Backup destination

☑ TRAINING   \\HIS0164\Test Backup

Back up

Not Back up

☐ Back up even if it is used in other PC.

Click Back up button for backup project.

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2. Project Backup

Show progress during backup project.
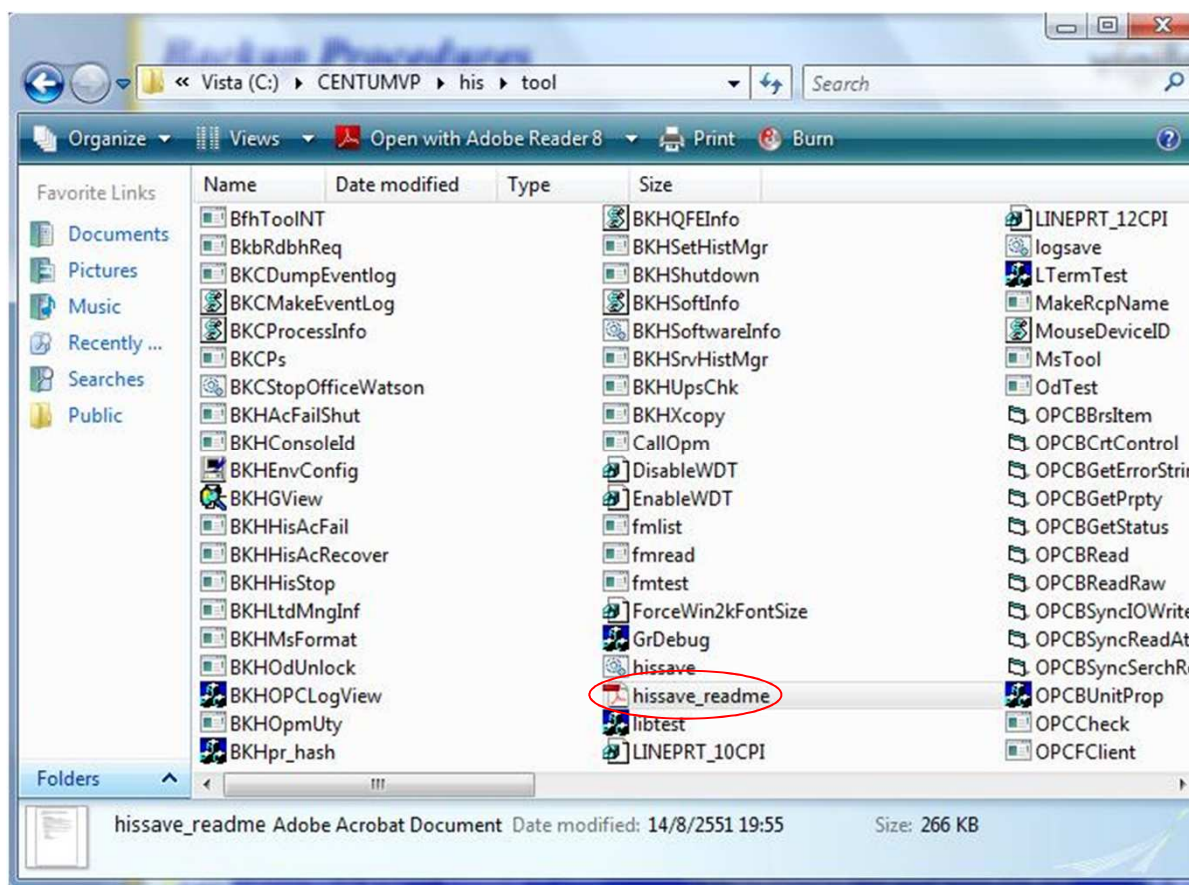
When backup project finished.
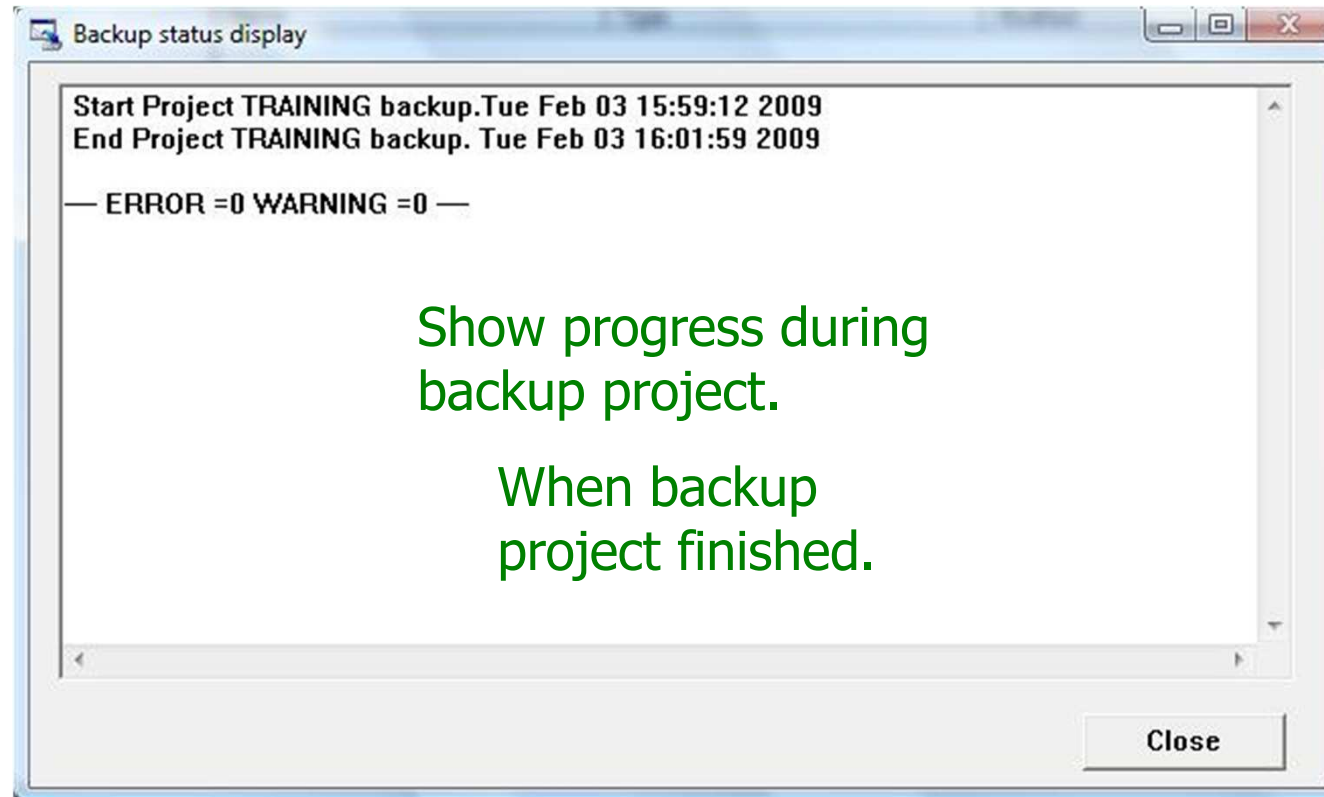
2. Project Backup

2.2 Backup from Maintenance Menu

Select as follows for backup; **[Start] - [YOKOGAWA CENTUM] - [Maintenance] - [Projectsave].**
See the hissave_readme.PDF file in **CENTUM VP\HIS\TOOL** for details of the backup method, backup contents, and the batch file edit method.

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Ex.

\<CENTUM VP Backup Procedure Manual>

1. Save Procedure

1-1   Application Software

Save two sets of application software to DAT (DDS media).

One set is shipped with the product, while the other is used as a backup.

As a rule, use DAT as the storage media for shipments without Japan. Use two DATs: one to save the PJT database and the other to save other HIS-specific files.

\<Procedure>

Use the batch file HISSAVE.BAT to compress PJT database and HIS-specific files, then save them to DAT (DDS media).

When using DAT, choose [Start Menu] - [Management Tools (Common)] - [Backup] with the administrator authority.

Executing the HISSAVE.BAT automatically compresses and saves the following:

- PJT database
- Recipe database
- Reports
- Multimedia data
- PICOT-related files and registry
- Window set-related data.

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2. Project Backup

Ex.

1. Create a work folder in each HIS.

   Example)

   C:\HISSAVE

2. Copy the HISSAVE.BAT, unlha.exe and unlha32.dll into the folder created in Step 1.

   Be sure to place these three files in the same folder.

3. Right-click on the HISSAVE.BAT and open it from "Edit."

   Double-clicking the file will initiate execution. Be sure to click on the file with the right mouse button and open it from the "Edit" menu.

   In the "SET CENTUMDIR=" item, specify the location where the CENTUM VP is installed.

   Example)

   SET CENTUMDIR=D:\CENTUMVP
                 ^^^^^^^^^^^^^^

   In the "SET CHKPJT=" item, specify whether or not to save the PJT database.

   Example)

   SET CHKPJT=0
              ^^

   Select (1) "Save the PJT database" or (0) "Do not save the PJT database."

   Select (1) only for the master HIS to which the PJT database is to be saved.

   In the "SET PJTDIR=" item, specify the location of the PJT database to be saved.

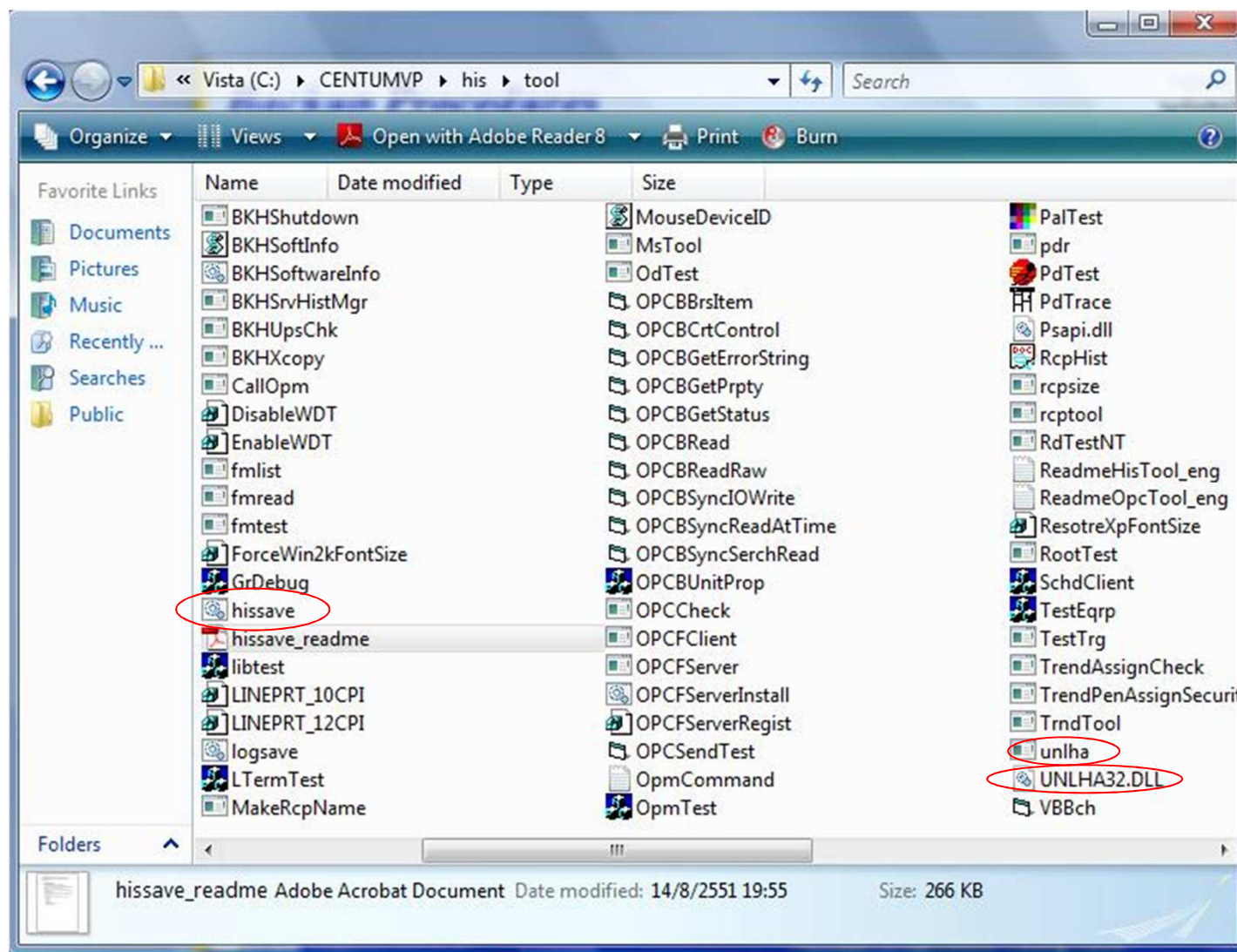   (This only applies to the PJT's master HIS.)

   Example)

   SET PJTDIR=D:\CENTUMVP\eng\BKProject\PJT000
              ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^

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2. Project Backup

Centum VP – his - tool

2. Project Backup

1. Create a work folder in each HIS.

   Example)

   C:\HISSAVE

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   In the "SET CENTUMDIR=" item, specify the location where the CENTUM VP is installed.

   Example)

   SET CENTUMDIR=D:\CENTUMVP

   ^^^^^^^^^^^^^^^

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2. Project Backup

In the "SET CHKPJT=" item, specify whether or not to save the PJT database.

Example)

SET CHKPJT=0

^^

Select (1) "Save the PJT database" or (0) "Do not save the PJT database."

Select (1) only for the master HIS to which the PJT database is to be saved.

In the "SET PJTDIR=" item, specify the location of the PJT database to be saved.

(This only applies to the PJT's master HIS.)

Example)

SET PJTDIR=D:\CENTUMVP\eng\BKProject\PJT000

^^

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2. Project Backup

In the "SET CHKRCP=" item, specify whether or not to save the recipe builder database.

Select (0) if the recipe builder database folder is located in the PJT database folder.

Example)

SET CHKRCP=0

           ^^

Select (1) "Save the recipe builder database" or (0) "Do not save the recipe builder database."

Select (1) only when a database of recipe builder exists in the applicable HIS.

In the "SET RCPDIR=" item, specify the location of the recipe database to be saved.

(This only applies to the HIS where a database of recipe builder exists.)

Example)

SET RCPDIR=D:\RCP

          ^^^^^^^^

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Although the specific compression ratio varies depending on the PJT database, as a guideline a PJT database can be compressed to around 30 percent of its original size.

Since compressed files are created in Drive C by default, confirm that Drive C has sufficient free space.

If Drive C does not have sufficient free space, you may create compressed files in a different drive by editing the items explained below.

You may change the drive to one with sufficient free space (C to D, etc.), but do so only when Drive C doesn't have sufficient free space.

Example)
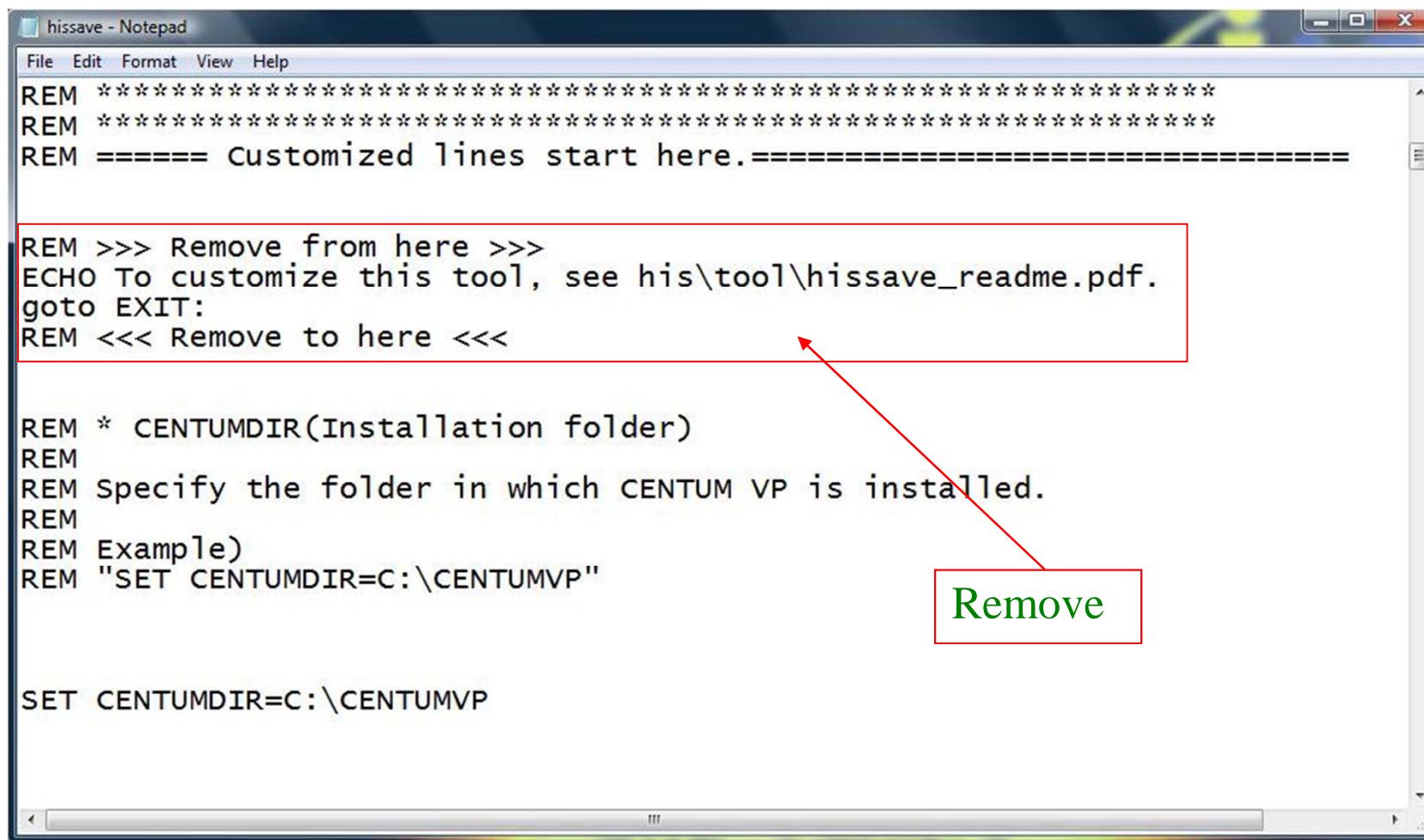
SET OUTDRV=C

^^^

4. Double-click on the HISSAVE.BAT edited in Step 3 to execute it.

5. A folder is automatically created in Drive C under the name of the HIS computer. The files are saved in this folder.

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2. Project Backup (Edit hissave file)

1. Remove word.

The screenshot shows a Notepad window titled "hissave - Notepad" with the following content:

```
REM ****************************************************
REM ****************************************************
REM ====== Customized lines start here.===============================

REM >>> Remove from here >>>
ECHO To customize this tool, see his\tool\hissave_readme.pdf.
goto EXIT:
REM <<< Remove to here <<<


REM * CENTUMDIR(Installation folder)
REM
REM Specify the folder in which CENTUM VP is installed.
REM
REM Example)
REM "SET CENTUMDIR=C:\CENTUMVP"



SET CENTUMDIR=C:\CENTUMVP
```
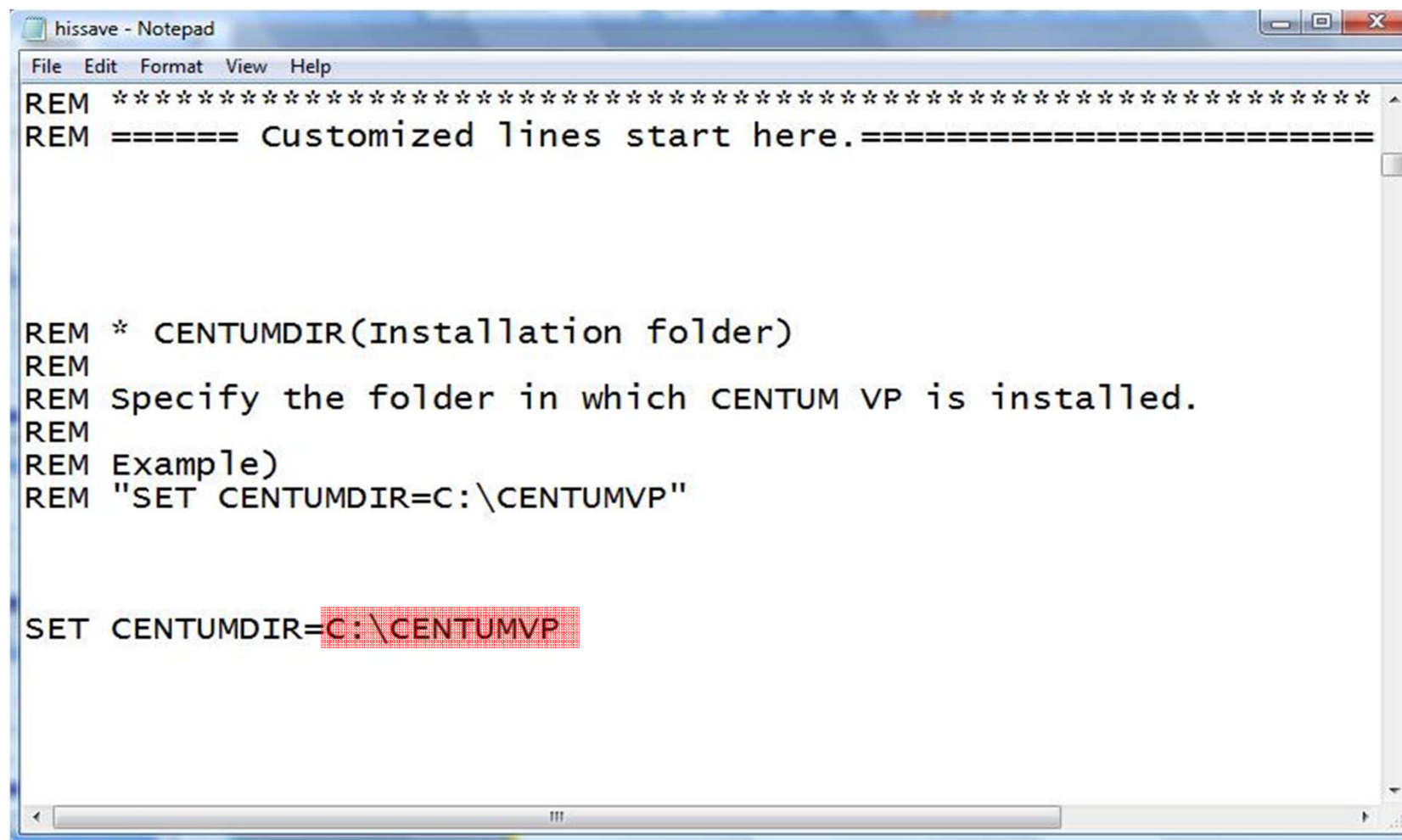
Remove

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CENTUM VP

2. Project Backup (Edit hissave file)

2.Specify the Centum VP folder.


```
hissave - Notepad

File   Edit   Format   View   Help

REM   **********************************************************
REM   ====== Customized lines start here.=========================



REM * CENTUMDIR(Installation folder)
REM
REM Specify the folder in which CENTUM VP is installed.
REM
REM Example)
REM "SET CENTUMDIR=C:\CENTUMVP"



SET CENTUMDIR=C:\CENTUMVP
```

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3.Specify the Project folder.


```
hissave - Notepad

File   Edit   Format   View   Help

REM "SET CHKPJT=0"
REM


SET CHKPJT=1


REM * PJTDIR (Project database folder)
REM
REM Specify the folder of CENTUMVP project database.
REM
REM Example)
REM "SET PJTDIR=C:\CENTUMVP\eng\BKProject\MYPJT"


SET PJTDIR=C:\CENTUMVP\eng\BKProject\Training



REM * CHKRCP (Executing save procedures for the recipe builder database)
REM
REM Specify whether or not to save CENTUM VP recipe builder database.
```

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4.Specify the output drive.


```
hissave - Notepad

File  Edit  Format  View  Help

REM * OUTDRV (Name of the output drive)
REM
REM Specify the name of the output drive.
REM
REM ******************************************************
REM *** Normally these lines need not be changed. ***
REM ******************************************************
REM
REM Change the drive to one with sufficient free space (C to D, etc.) only
REM when Drive C doesn't have sufficient free space.
REM
REM Example)
REM "SET OUTDRV=C


SET OUTDRV=F
```

Please save hissave file when edit finished.

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2. Project Backup

Backup from Maintenance Menu

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2. Project Backup

Press any key to continue..

2. Project Backup

Press any key to continue again…

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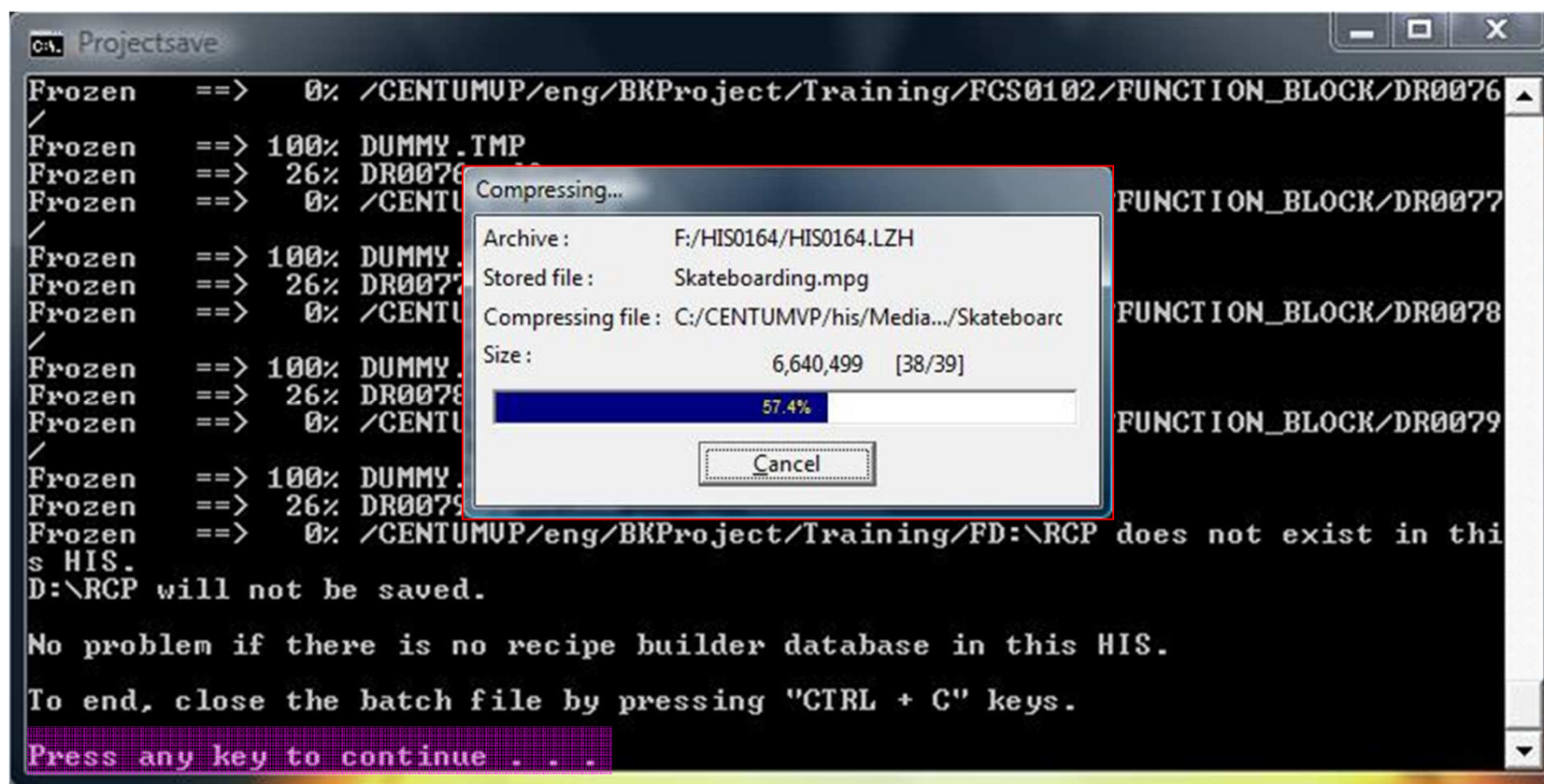
2. Project Backup

Press any key to finish…

2. *Project Backup*

In the output drive show the project folder name HIS0164 (Computer name).
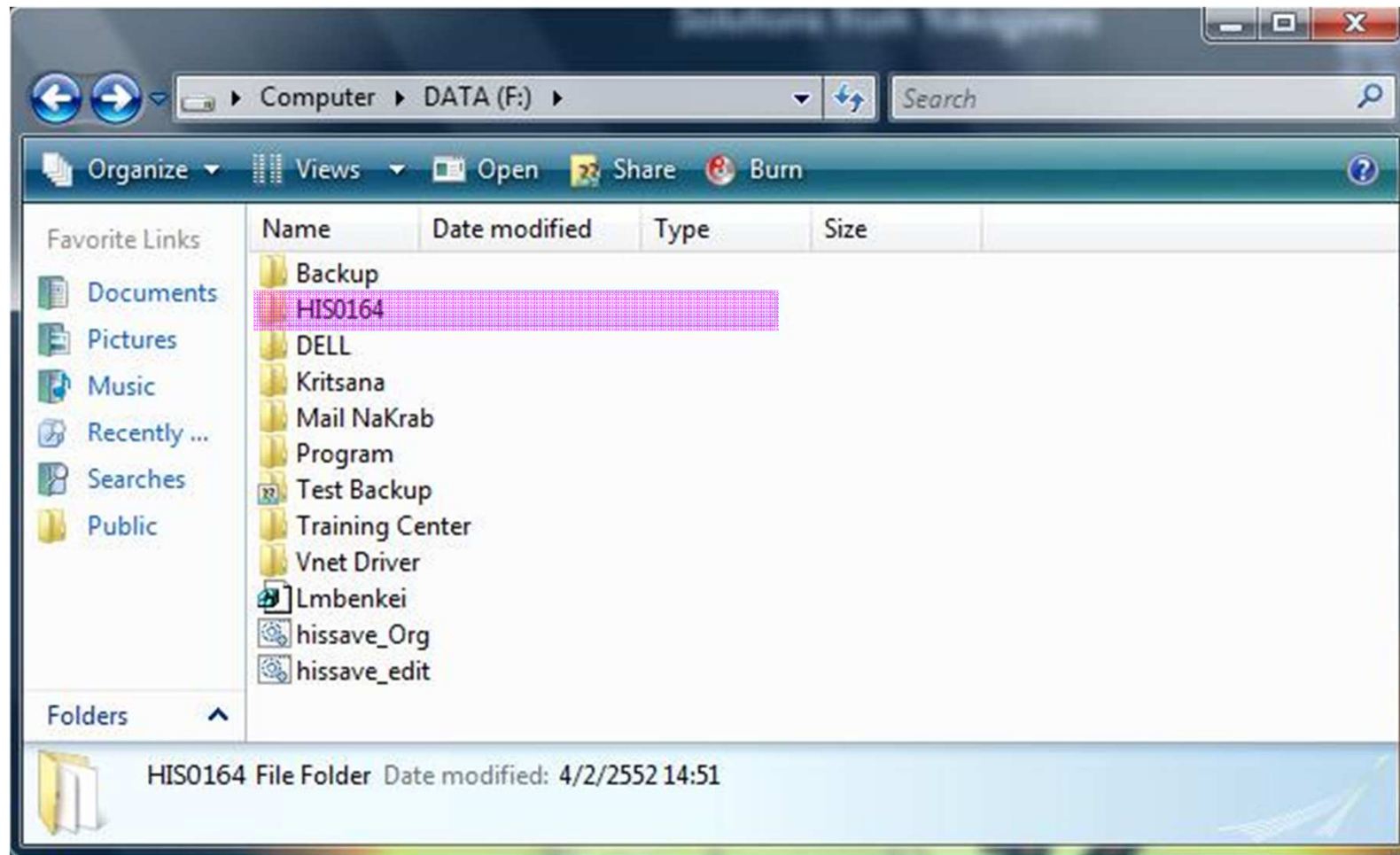
2. Project Backup

In the project folder name HIS0164.

Double click on 3 file if you want restore project data base.

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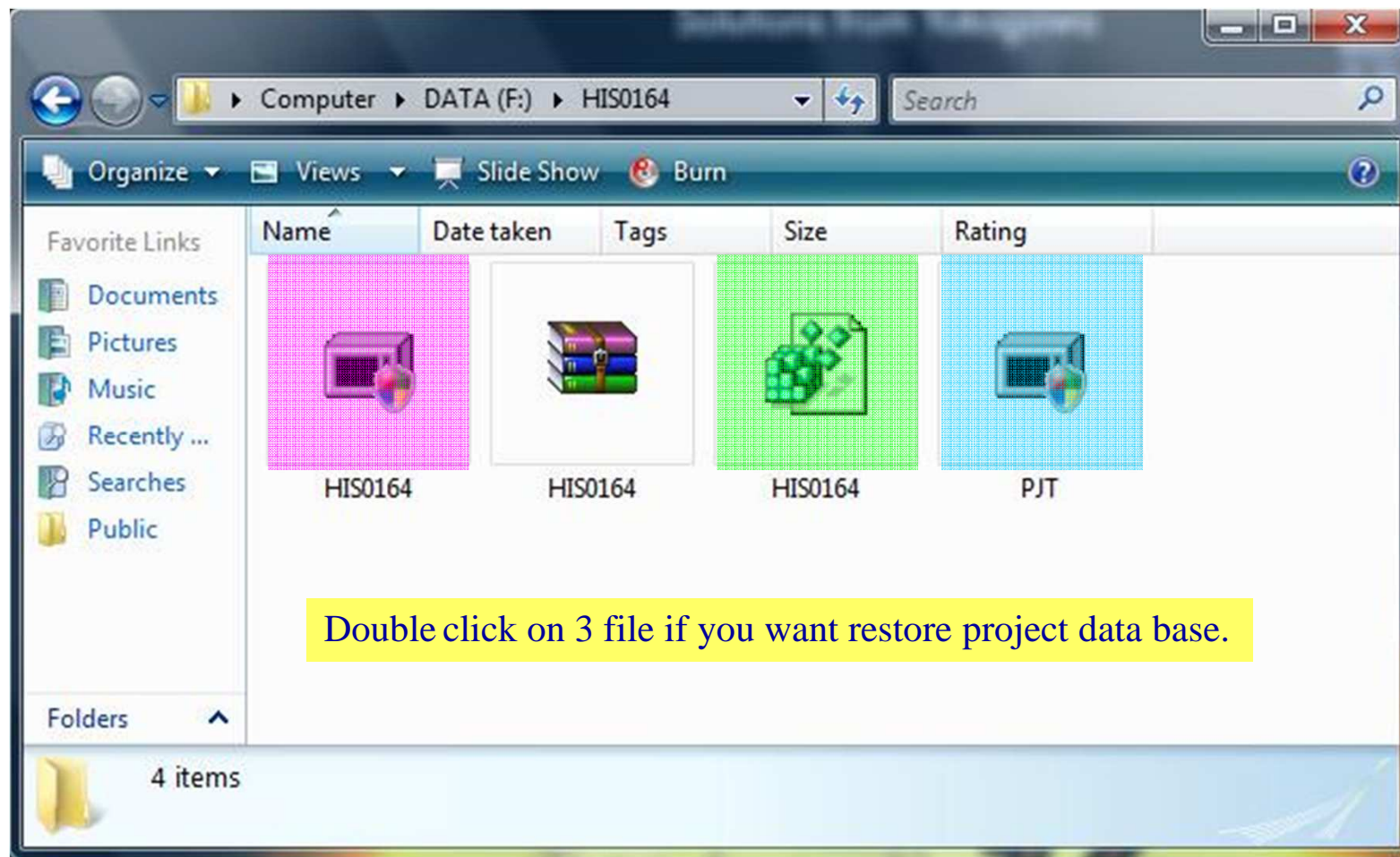
2. Project Backup

2.3 Backup from Maintenance Menu

Project folder = C:\CENTUMVP\eng\BKProject

Copy Project folder to Backup Project.
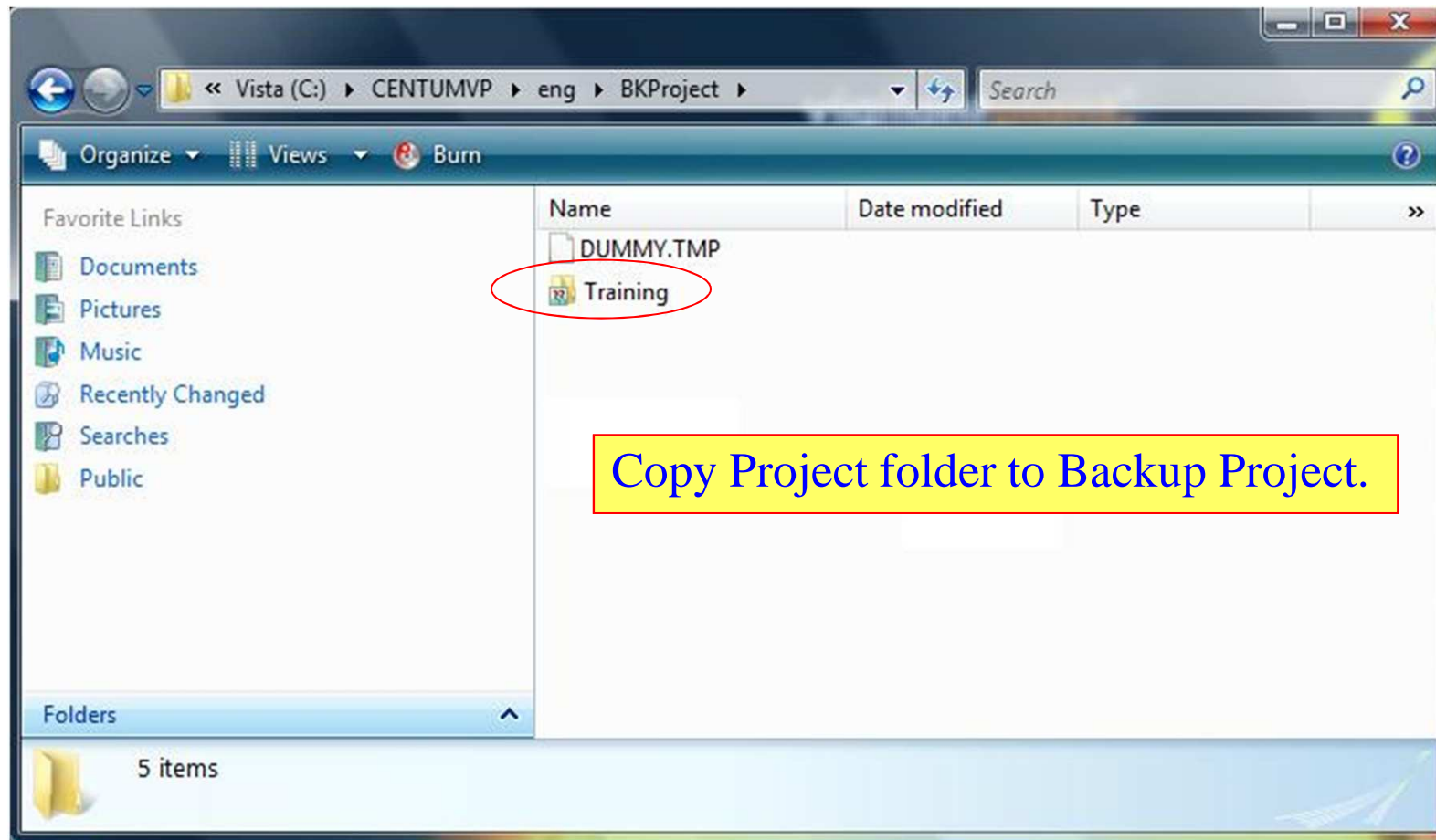
REGISTRY BACKUP

The registry is used to store Centum VP program, HIS setup, and other information and its backup copy should also be made along with a Centum VP backup.

The registry to backed up is as follows :
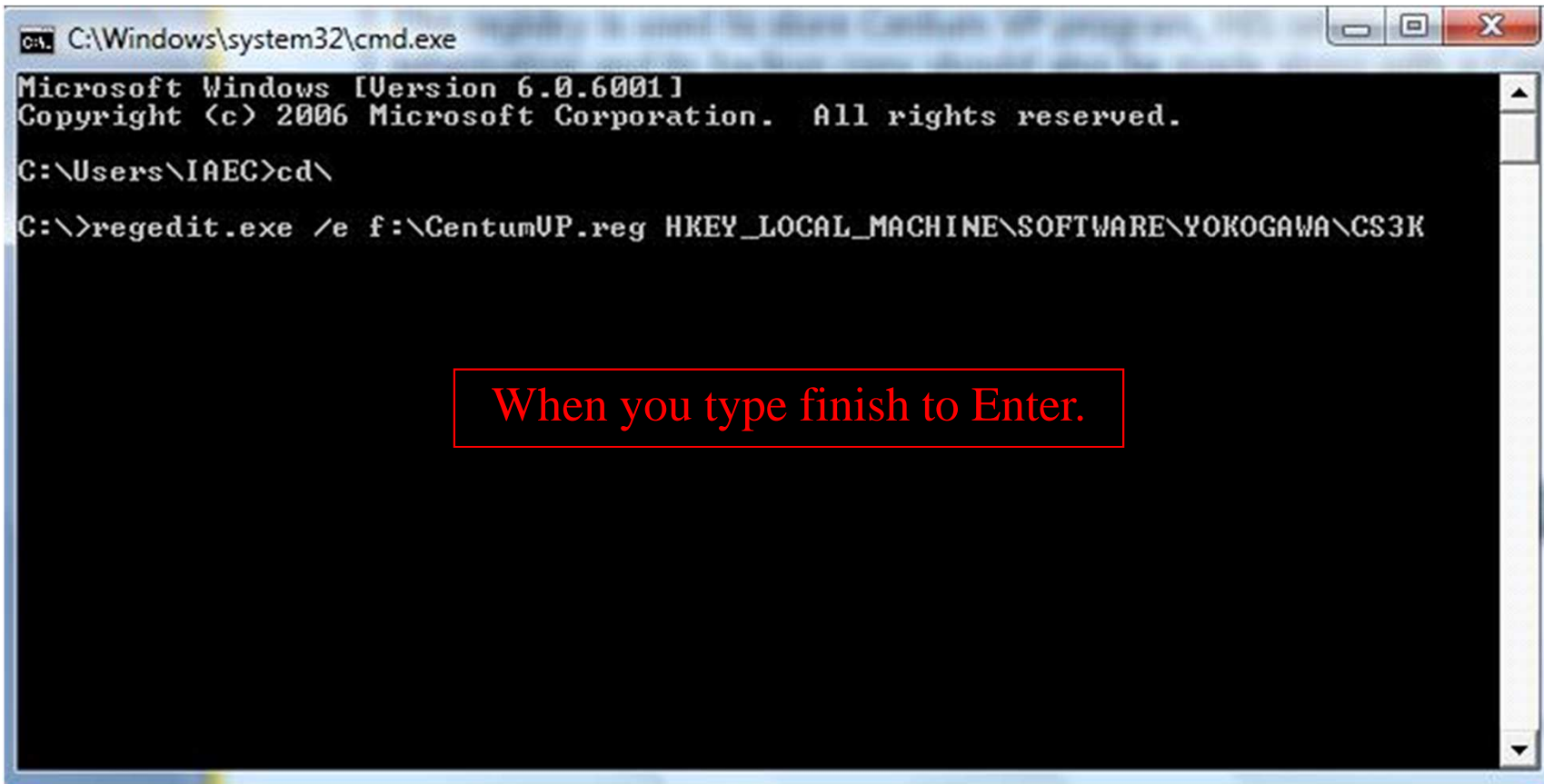
Using the command prompt, type the following ,

regedit.exe /e f:\CentumVP.reg
HKEY_LOCAL_MACHINE\SOFTWARE\YOKOGAWA\CENTUMVP

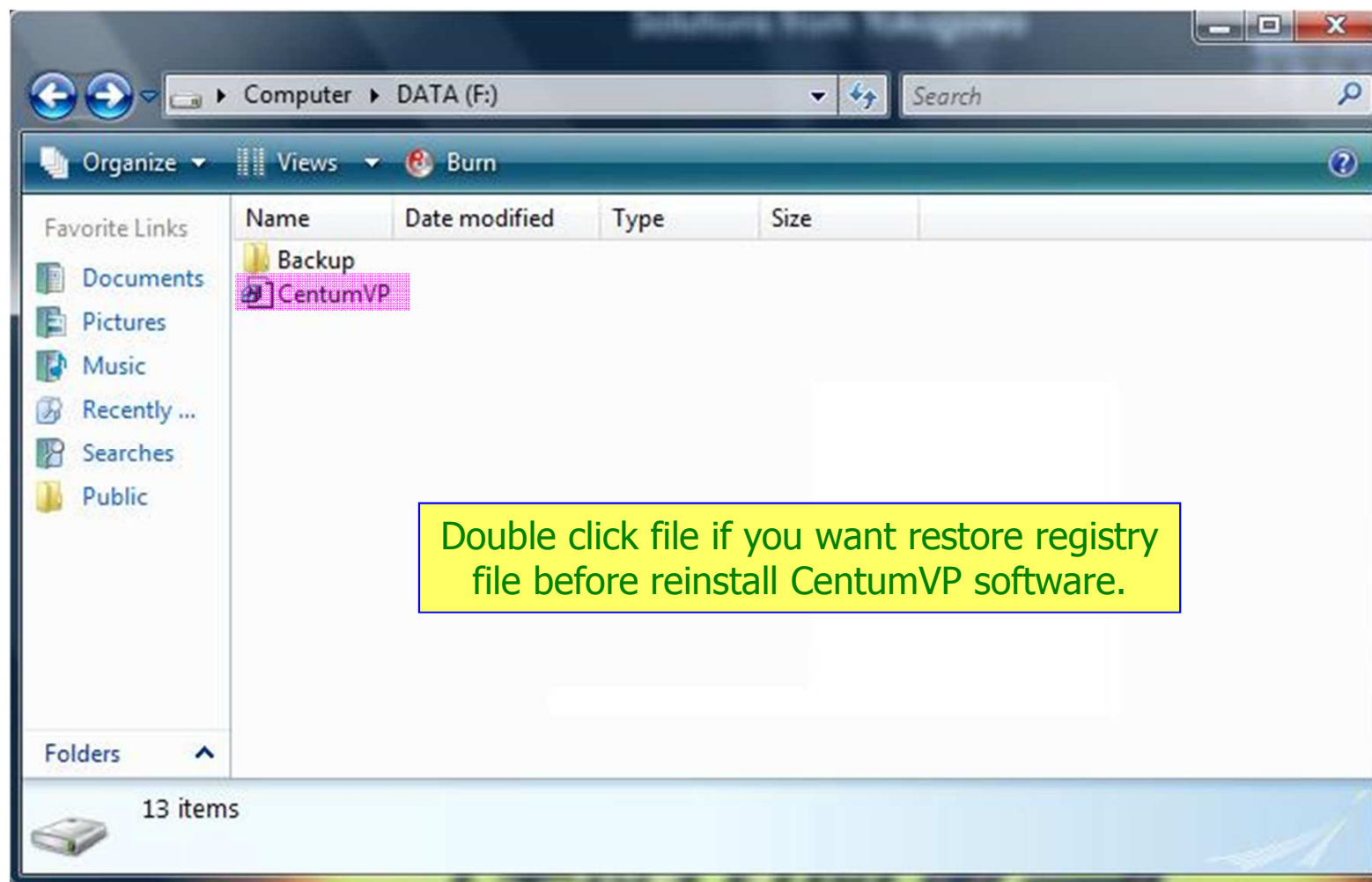**In both cases, the file CentumVP.reg is output to drive f:**

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3. Registry Backup

On cmd : c:\>regedit.exe /e f:\CentumVP.reg
HKEY_LOCAL_MACHINE\SOFTWARE\YOKOGAWA\CS3K

When you type finish to Enter.

CentumVP registry file after backup finished.

Double click file if you want restore registry file before reinstall CentumVP software.

4. CentumVP folder

Backup Files in CentumVP Folder

Copy CentumVP to Backup folder

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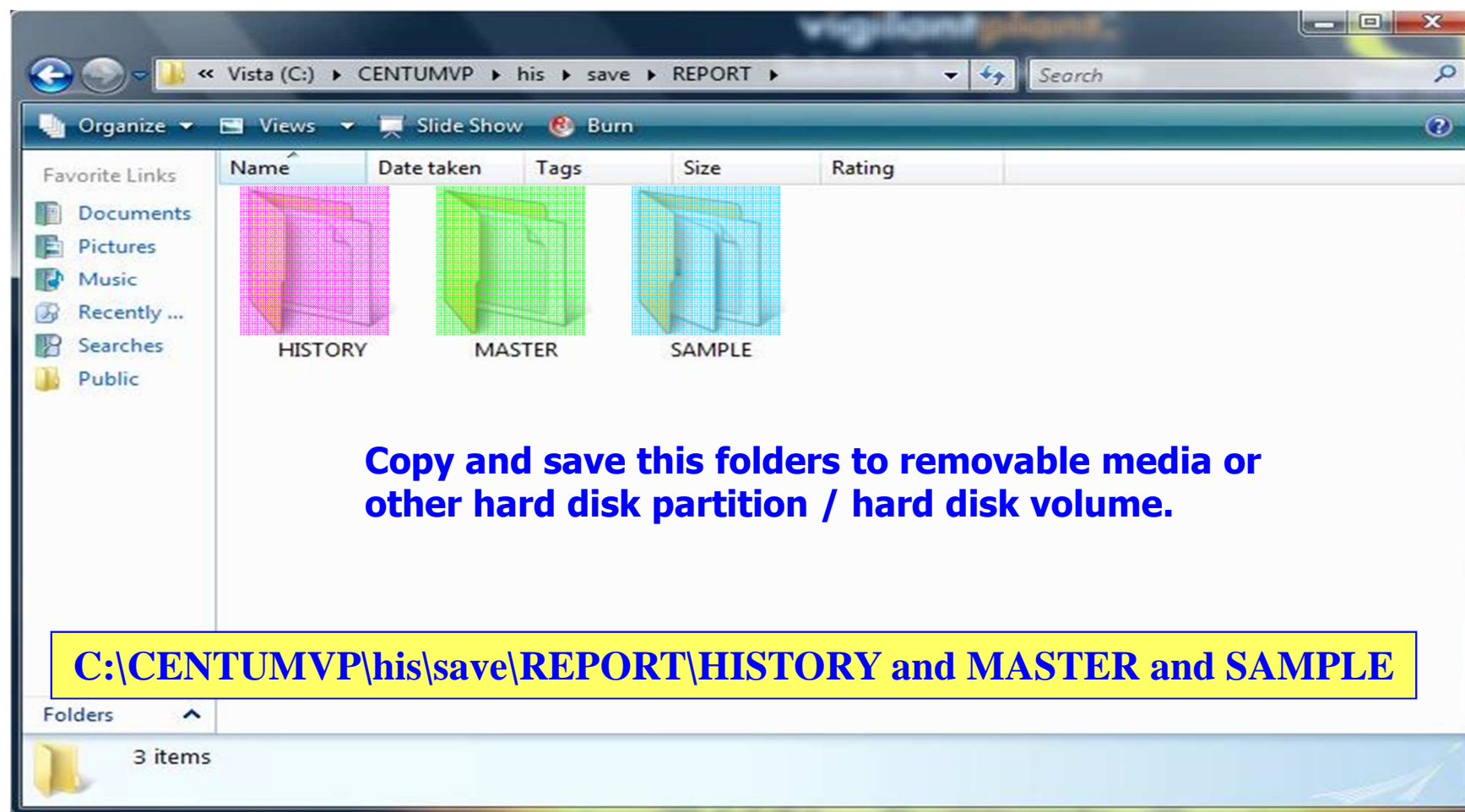" *CENTUM VP Maintenance Training Course* "
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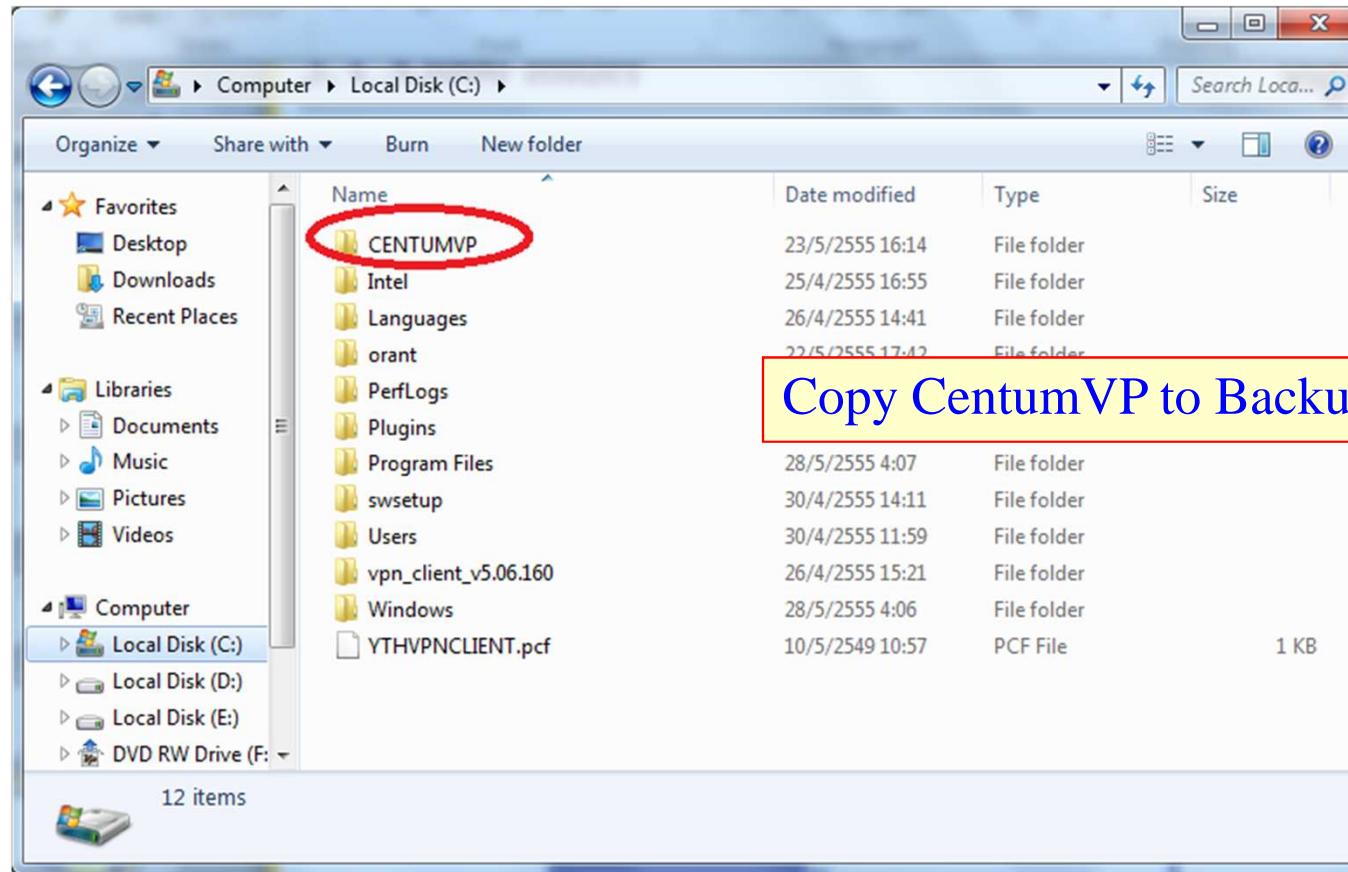
Saving / Backup Files

Report Backup

Each report can be copied to a storage medium using the copy function of the report package.
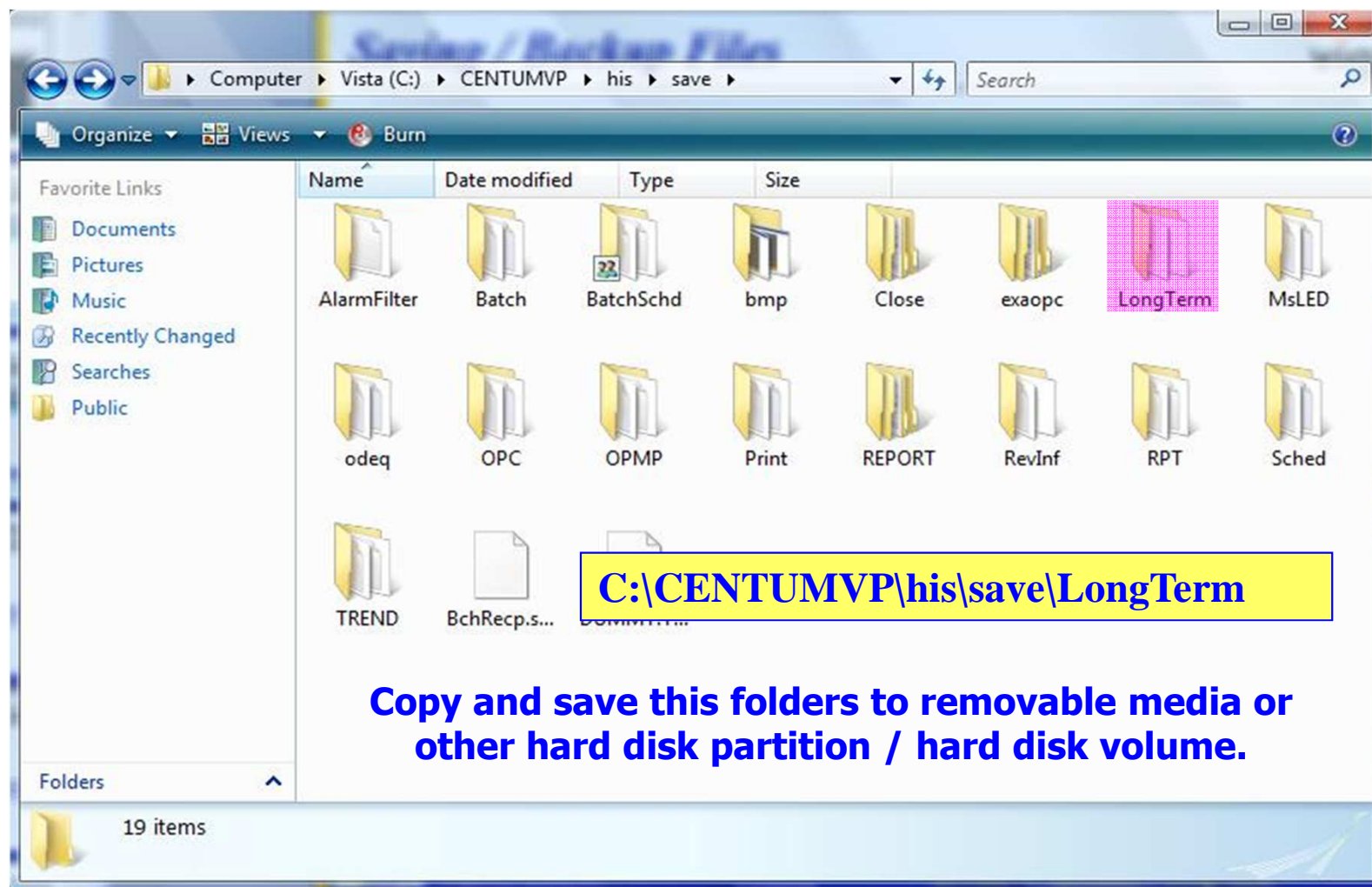

Copy and save this folders to removable media or other hard disk partition / hard disk volume.

C:\CENTUMVP\his\save\REPORT\HISTORY and MASTER and SAMPLE

Saving / Backup Files

Trend folder.

C:\CENTUMVP\his\save\TREND

Copy and save this folders to removable media or other hard disk partition / hard disk volume.

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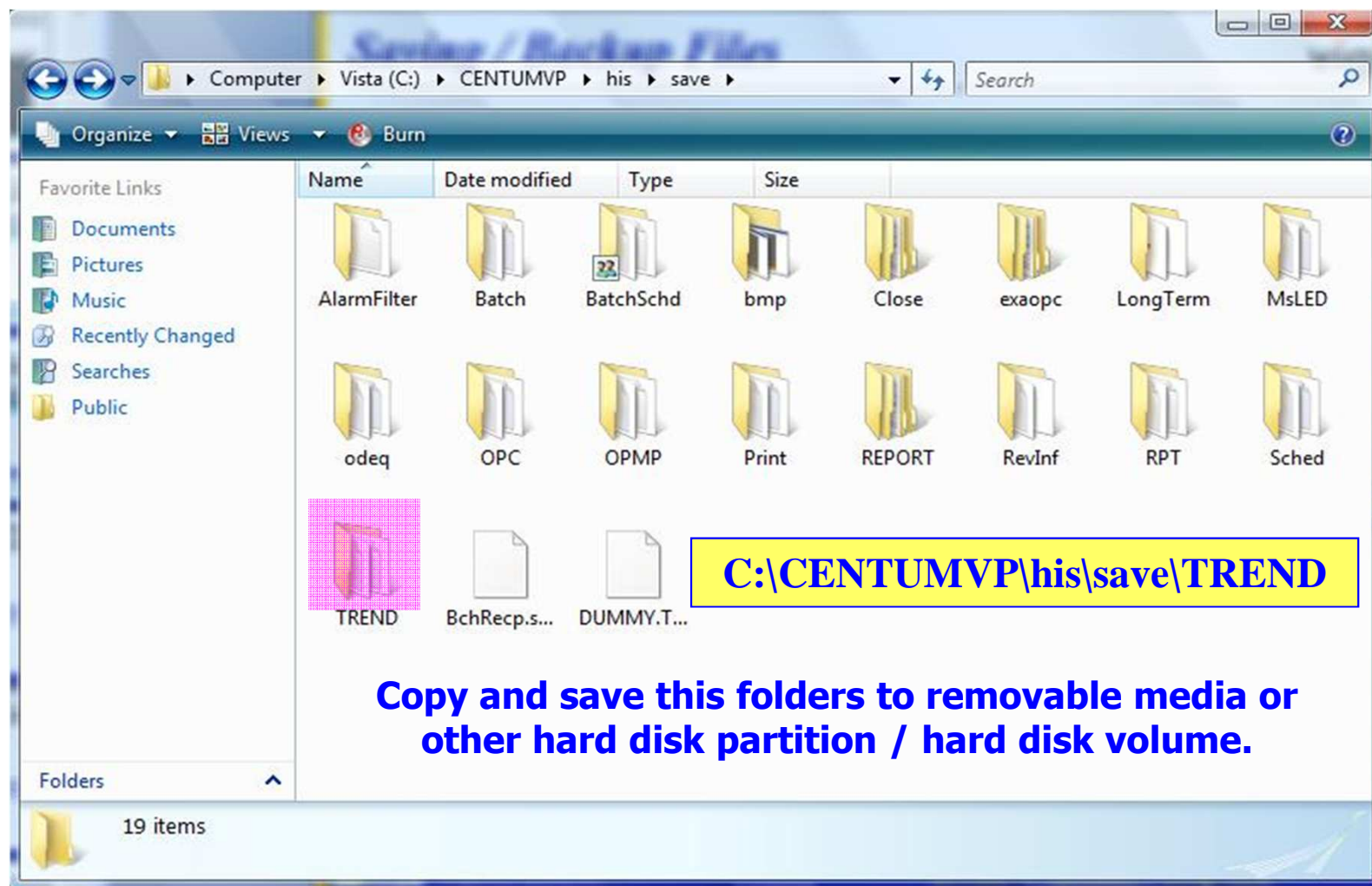
Saving / Backup Files

Long term folder.

C:\CENTUMVP\his\save\LongTerm

Copy and save this folders to removable media or other hard disk partition / hard disk volume.

Hard Disk Recovery Procedure

The hard disk can be recovered using CENTUM VP folder and registry backups.
The following procedure is applicable to the PC having one hard disk:

1. Replace the damaged hard disk.
2. Install Windows. The name of the folder to install the system does not have to be the same as the previously used one.
3. Copy the backup CENTUM VP folder to its previous location on the hard disk.
   The location must be the same because the previously installed location is saved in the CENTUM VP registry backup.
4. Restore the CENTUM VP registry.
5. Reinstall the CENTUM VP system — **do not use the key-code disk**.

• A new control bus driver installed on Windows needs to be newly added.

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Mandatory-replacement

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Maintenance of FCS

This chapter describes the maintenance precautions and procedures for an FCS, including:

1. Indications of abnormalities.

2. Daily inspections.

3. Procedures for replacing parts having a limited life that must be replaced, and parts that can be replaced by the user.

4. Procedure for replacing each unit.

Precautions for Maintenance

When storing or carrying maintenance parts, keep them in a conductive bag

When doing maintenance work, wear a wrist strap connected to a ground wire with a grounding resistance of 1 M ohm. Be sure to ground the wrist strap.
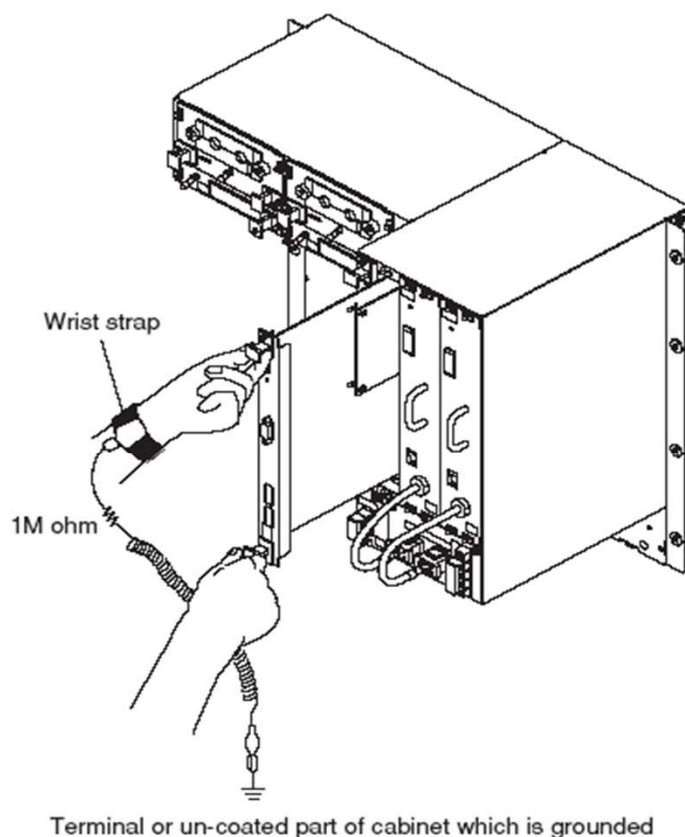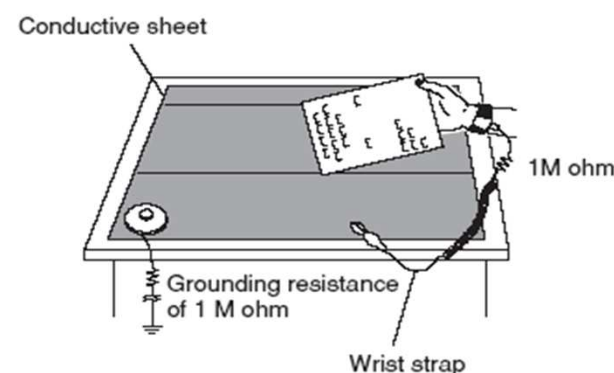

Wrist strap

1M ohm

Terminal or un-coated part of cabinet which is grounded

Figure   How to Handle Cards and Modules

Conductive sheet

1M ohm

Grounding resistance of 1 M ohm

Wrist strap

When working with a card with battery (power supply unit) on a conductive sheet, set the BATTERY ON/OFF switch to the OFF position or remove the battery

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Precautions for Maintenance

conductive sheet

wrist strap

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Daily Maintenance

A human interface station (HIS) always monitors the status of each FCS, and upon occurrence of and recovery from a failure of an FCS, a HIS announces it to the user with a buzzer sound and display message.
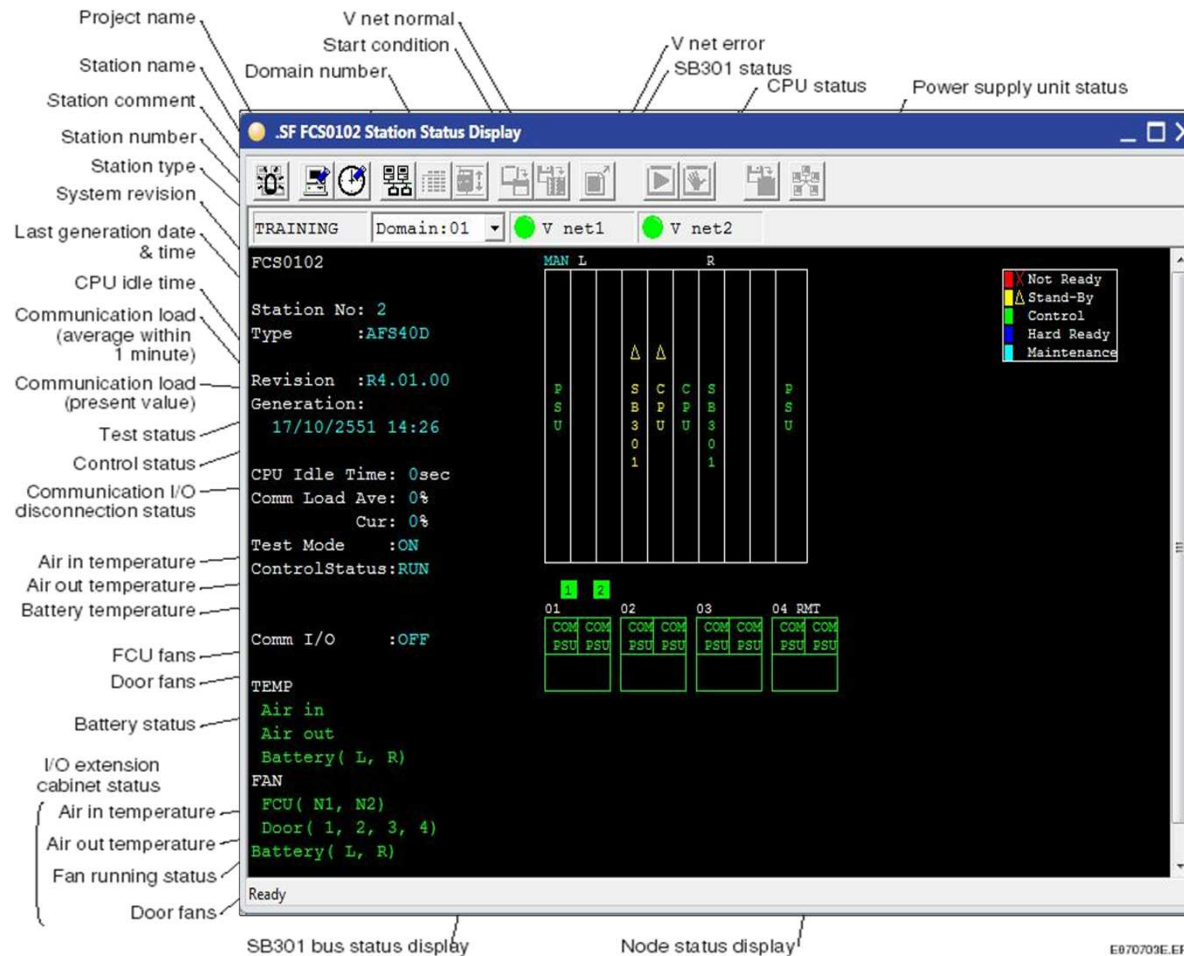
FCS Status Display Window

Figure Status Display Area of KFCS Status Display Window

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Check of Status Indication Lamps: LFCS/KFCS

Table Lamp Status : LFCS2/LFCS, KFCS2/KFCS ③⑩

Unit or Card	Lamp Name	On	Off	Remarks
Power supply unit	RDY	Normal	Failed	Indicates the unit status.
Processor card	HRDY	Normal	Failed	Indicates the hardware status of the card.
	RDY	Normal	Failed	Indicates the card status.
	CTRL	In service	Stand-by	Lit for either processor card in a duplexed FCU.
	COPY	Program copy	Normal	Lit only while the program is being copied; normally off.
RIO bus interface card (*1)	HRDY	Normal	Failed	Indicates the hardware status of the card.
	RDY	Normal	Failed	Indicates the card status.
	CTRL	During communication	Stand-by	Lit for either RIO bus interface card in a duplexed FCU.
ESB bus interface card (*2)	RDY	Normal	Failed	Indicates the card status.
	CTRL	During communication	Stand-by	Lit for either ESB bus interface card in a duplexed FCU.
V net coupler unit	RCV	Receiving	Not receiving	Lit when communication is normal.
	SND	Normal (on)	Failed	Lit when communication is normal.
	SND-L	Normal (on)	Stand-by	Normal when either lamp is lit.
	SND-R	Normal (on)	Stand-by	
RIO bus coupler unit (*1)	RCV	Receiving	Not receiving	Lit when communication is normal.
	SND	Normal (on)	Failed	Lit when communication is normal.
	SND-L	Normal (on)	Stand-by	Normal when either lamp is lit.
	SND-R	Normal (on)	Stand-by	

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ESB bus coupler unit (*2)	RCV	Receiving	Not receiving	Lit when communication is normal.
	SND-L	Normal (on)	Stand-by	Normal when either lamp is lit.
	SND-R	Normal (on)	Stand-by	
External interface unit	N1	Failed	Normal	Lit in red when the fan speed is abnormal
	N2	Failed	Normal	Lit in red when the fan speed is abnormal.
	D1 (*3)	Failed	Normal	Lit in red when the fan speed is abnormal.
	D2 (*3)	Failed	Normal	Lit in red when the fan speed is abnormal.
	D3 (*3)	Failed	Normal	Lit in red when the fan speed is abnormal.
	D4 (*3)	Failed	Normal	Lit in red when the fan speed is abnormal.
ESB bus interface master module (with SOE interface)(*4)	RDY	Normal	Failed	Indicates the SB311 status.
	CTRL	In service	Stand-by	Lit for either SB311 in a duplexed FCU.
	SRDY	SOE in service	SOE out service	Lit when SOE is in service.
	LINK	LINK established	LINK not Established	The green light turns on when LINK is established.
	ACT	Active	Inactive	The green light turns on when frames are active on Ethernet.
	SYNC	Synchronous	Asynchronous	The green light turns on when external clock signal is used.

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*1: In case of LFCS2/LFCS
*2: In case of KFCS2/KFCS
*3: Lamps of the fuses for door fans of the AFS20S/AFG20S, AFS20D/AFG20D, AFS40S/AFG40S and AFS40D/AFG40D.
*4: For Models AFS30D, AFG30D, AFS40D and AFG40D.

FFCS Display Window

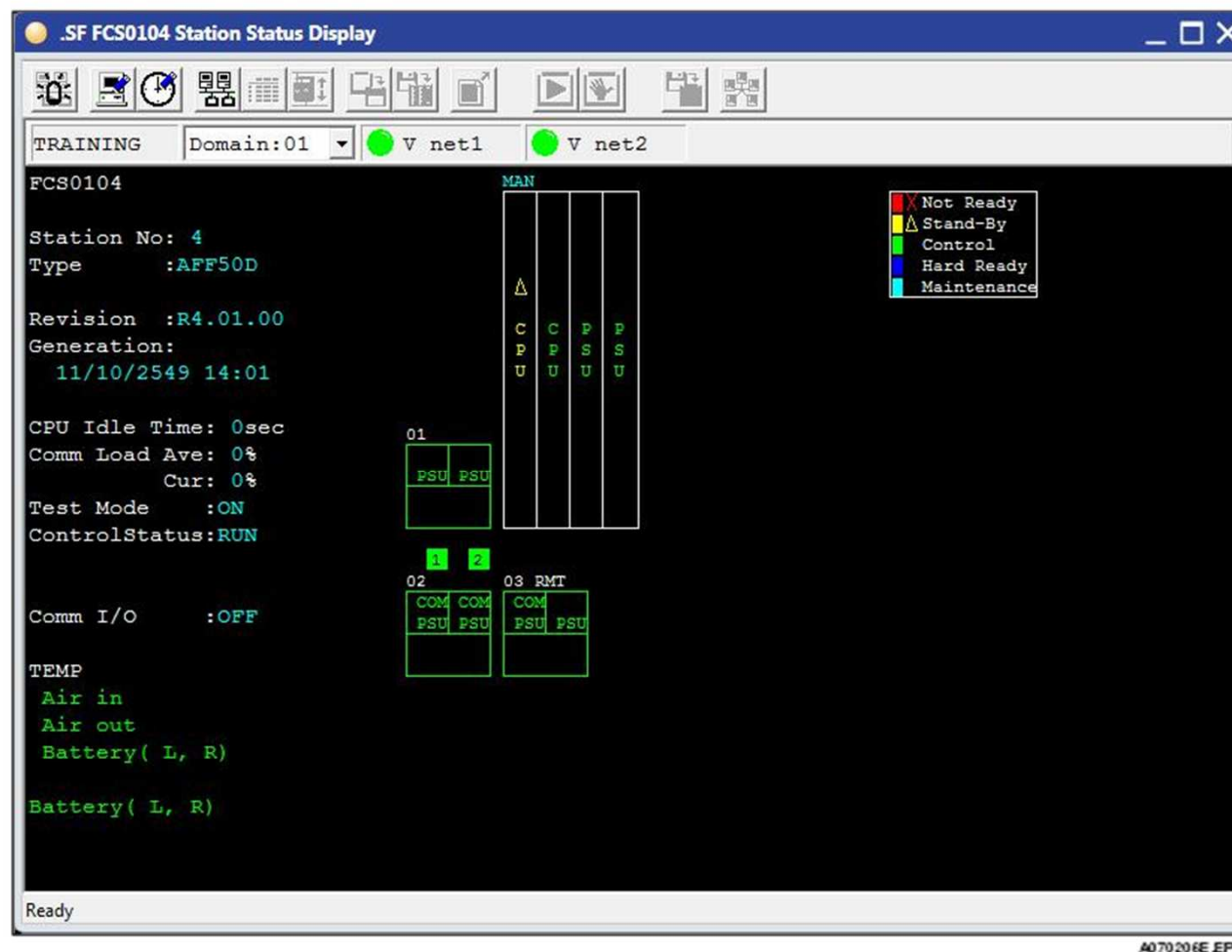The figure below shows an example of a FFCS status display window.

Figure FFCS Status Display Window : FFCS ③

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Check of Status Indication Lamps:FFCS

■ Inspection of LEDs : FFCS ③ CS 000

Power supply modules, processor modules, bus interface modules, and I/O modules have status display LEDs. It can easily be identified whether or not a module is operating normally by checking whether these LEDs are turned on or off.

Table Types and Functions of Status Display LEDs of Common Modules : FFCS ③

Modules name	Indicator	Meaning of ON	Meaning of OFF
Power supply module	SYS	+5V output normal	+5V output abnormal
	FLD	+24V output normal	+24V output abnormal
Processor module	HRDY	Hardware normal	Hardware abnormal
	RDY	Module normal	Module abnormal
	CTRL	Module is operating normally	The module is stand-by
	COPY	Copying normal	Not copying
	RCV-1, 2	Receiving frames from V net	Not receiving
	SND-1, 2	Sending frames to V net	Not sending
ESB Bus coupler module	RCV	Receiving ESB bus frames from node units	Not receiving
	SND	Sending ESB bus frames to V net	Not sending
ESB bus interface module	STATUS	Hardware normal	Hardware abnormal
	SEL	During data transmission to I/O module	Not sending
	RSP	During data reception from I/O module	Not receiving
ER Bus interface master module	STATUS	Hardware normal	Hardware abnormal
	ACT	Module is operating normally	The module is stand-by
	DX	Module is set to dual-redundant operation	Module is set to single operation
	RCV-1	Receiving data	Data is not received
	SND-1	Sending data	Data is not sent
ER Bus interface slave module	STATUS	Hardware normal	Hardware abnormal
	RCV	Receiving data	Data is not received
	SND	Sending data	Data is not sent

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Mandatory-replacement Parts in LFCS/KFCS

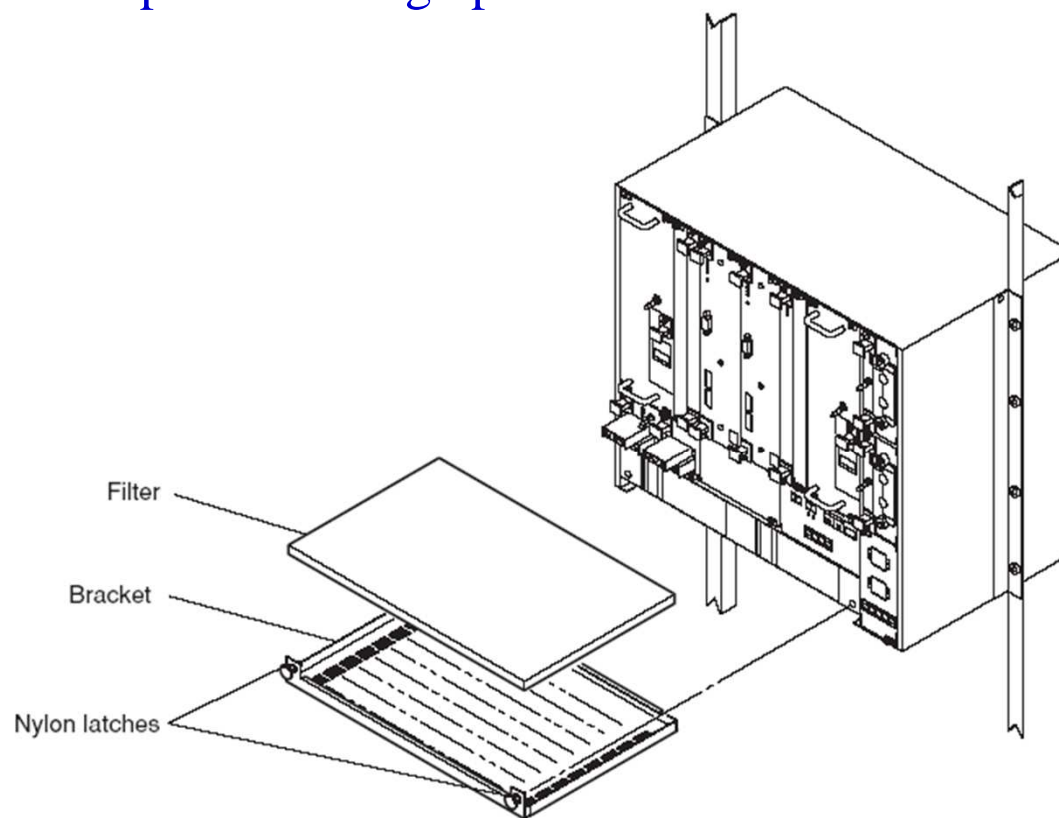The table below shows the recommended replacement periods for preventive maintenance.

Table   Mandatory-replacement Parts and Recommended Replacement Parts : LFCS2/LFCS, KFCS2/KFCS ③

Part Name	Part No.	Recommended Replacement	Period By User	Remarks
Air filter	T9070CB	1 year	Yes	For door fan unit (Carry out cleaning every three months.)
	T9070CK	1 year	Yes	For FCU nest (Carry out cleaning every three months.)
Fan unit Model	AIP601	4 years	Yes	For nest and door fan units
Fan	A1096EM			
Battery pack	S9400UK S9765UK	3 years 1.5 years 9 months	Yes	At the ambient temperature of 30 °C or lower on average At the ambient temperature of 40 °C or lower on average At the ambient temperature of 50 °C or lower on average
Aluminum electrolytic capacitor	-	8 years	No	In a power supply unit; to be replaced by Yokogawa Engineering Service Corp.
Fuse built in power supply unit	S9502VK S9580VK S9504VK S9506VK S9579VK S9578VK	3 years	No	For PW301 For PW302 For PW304, PW404, PW704 For PW401 For PW402 For PW701, PW702
	S9109VK A1546EF	8 years		For PW481, PW482 For PW484

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CAUTION- Periodically clean air filters at about three-month intervals. Use water or neutral detergent and refit the filters after they have dried.
Can be replaced during operation.

Filter

Bracket

Nylon latches

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Figure   Replacing an Air Filter : LFCS2/LFCS, KFCS2/KFCS 3

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The two nest fan units are beneath the LFCS,KFCS with cabinet as shown in figure below.

When a fan fails, or when the speed of a fan becomes abnormal, the corresponding "FAN ALARM" lamp on the external interface unit lights in red.
(On the left is the N1 fan, and on the right is N2)
A fan unit can be replaced while the FCU is operating.
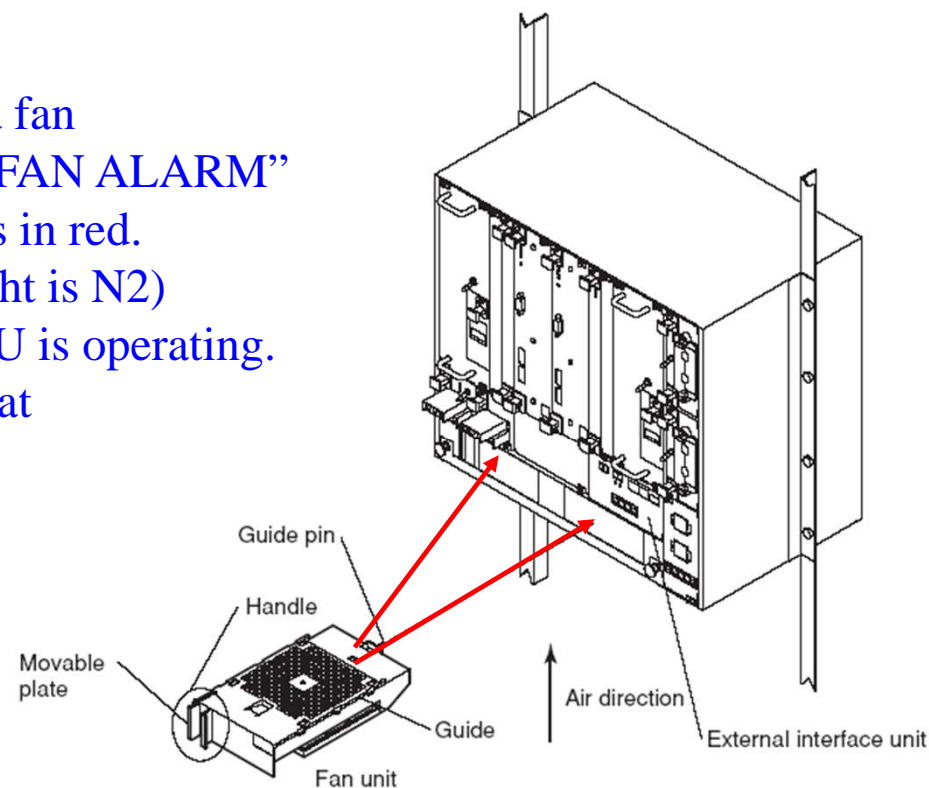**However**, do not replace both fan units at the same time, replace one by one.
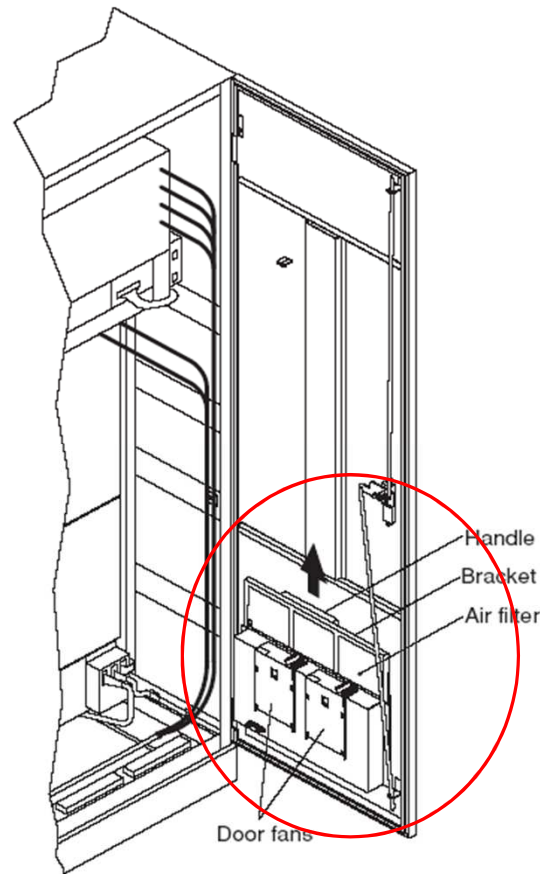
Guide pin

Handle

Movable plate

Air direction

Guide

Fan unit

External interface unit

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Figure   Replacing a Nest Fan Unit : LFCS2/LFCS, KFCS2/KFCS 3版

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Replacing the Air Filters of LFCS/KFCS with cabinet

There are two fans on each of the front and rear door of the cabinet to cool the inside of the cabinet.

An air filter is installed at the air intake of each door as shown below.
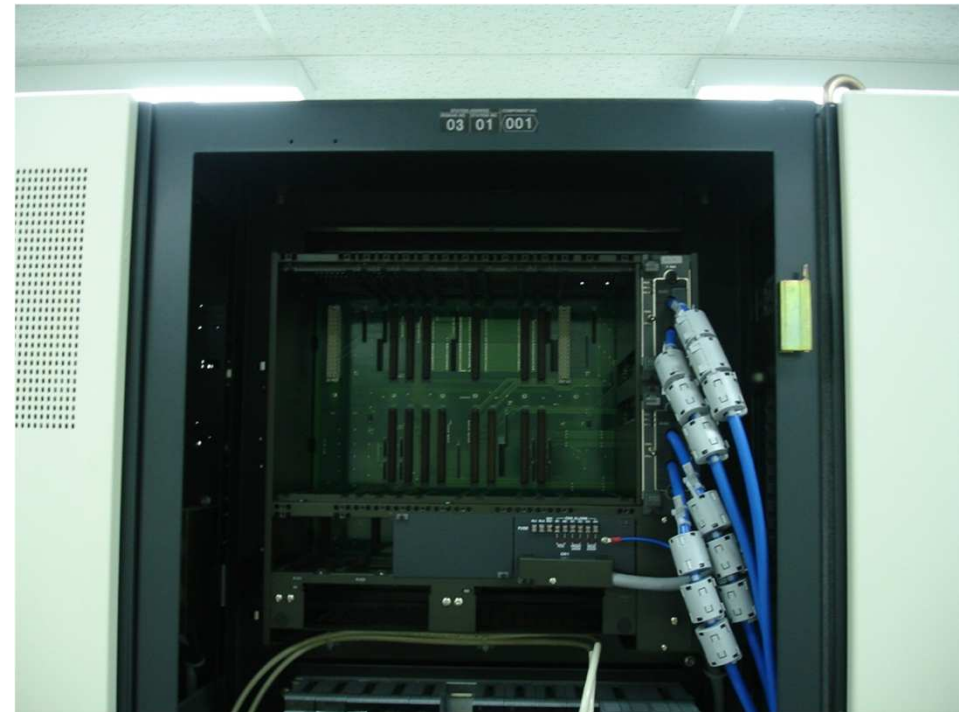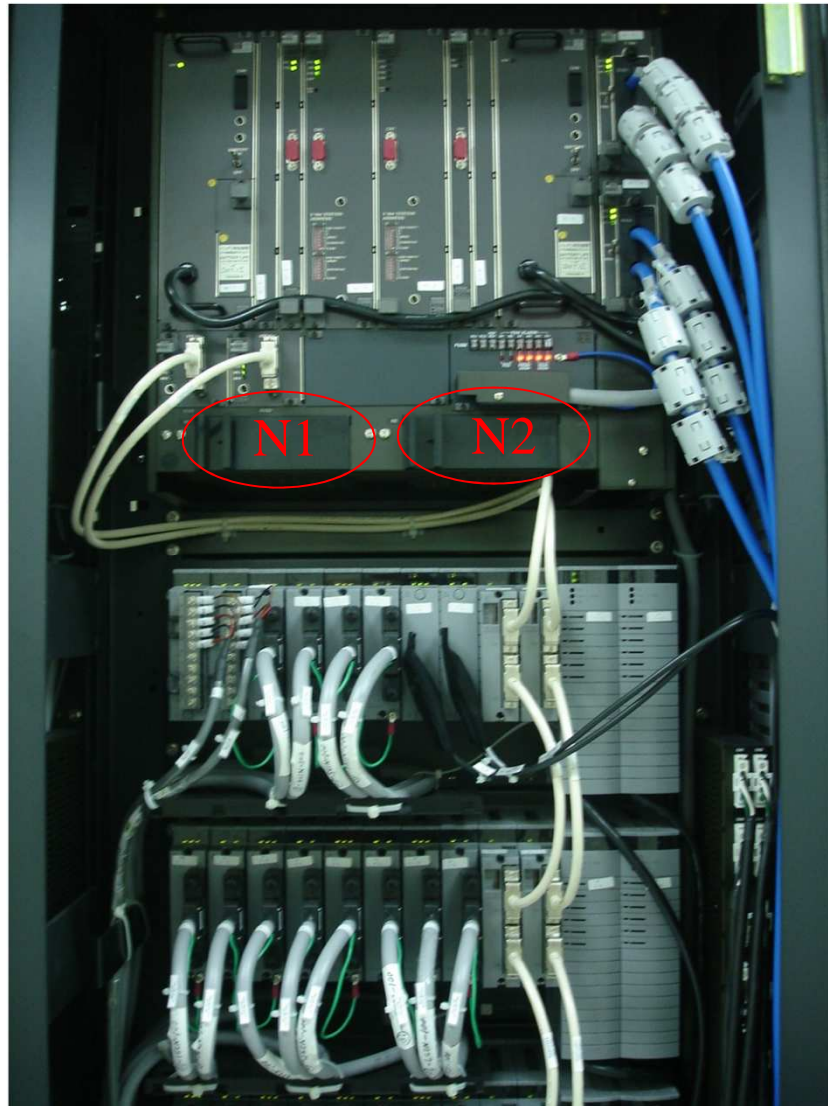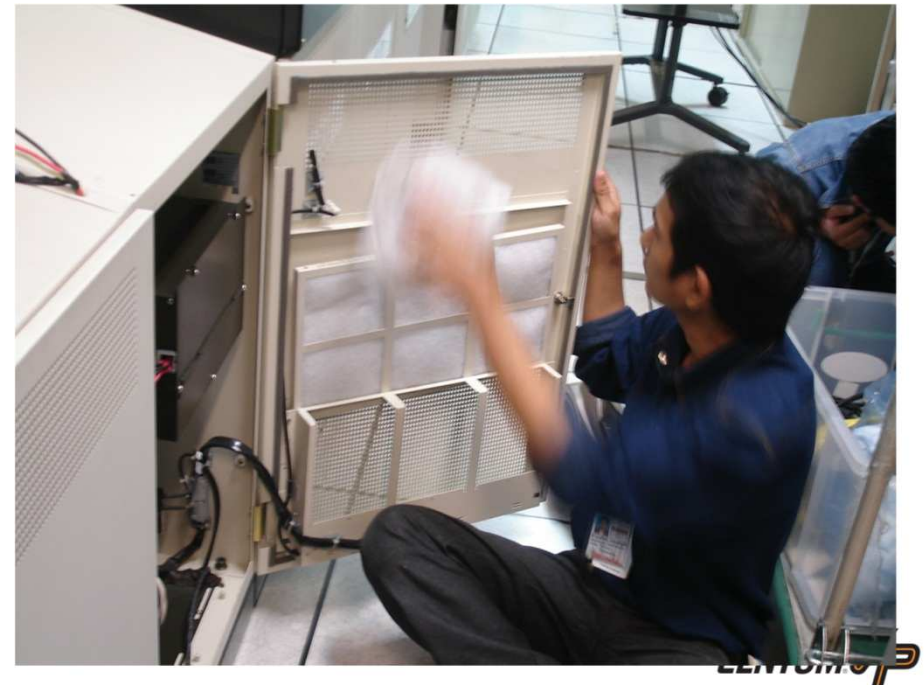

Handle
Bracket
Air filter
Door fans

A070403E.EPS

Figure   Air Filter for Door Fans : LFCS2/LFCS, KFCS2/KFCS ③

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Replacing a Fan Unit : LFCS/KFCS

N1 N2

03 01 001

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Replacing a Fan Unit : LFCS/KFCS

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Replacing a Fan Unit : LFCS/KFCS

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Replacing a Fan Unit : LFCS/KFCS

A fuse for each fan is mounted on the external interface unit.

The figure below shows fuses on the external interface units of an LFCS2/LFCS, KFCS2/KFCS with cabinet and rack mountable LFCS2/LFCS, KFCS2/KFCS.
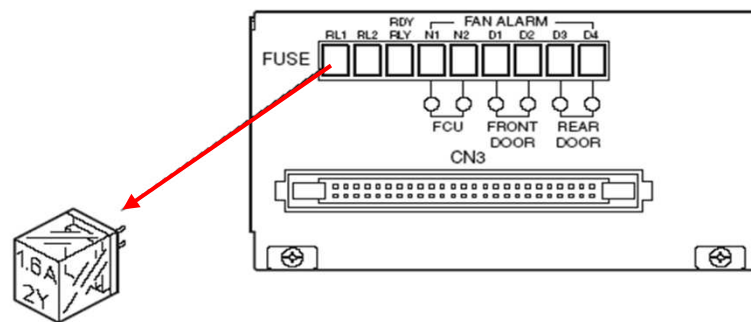
(Part No. S9528VK: 1.6 A fuse)

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Figure   Fuses on External Interface Unit of LFCS2/LFCS, KFCS2/KFCS with Cabinet : LFCS2/LFCS, KFCS2/KFCS ❸
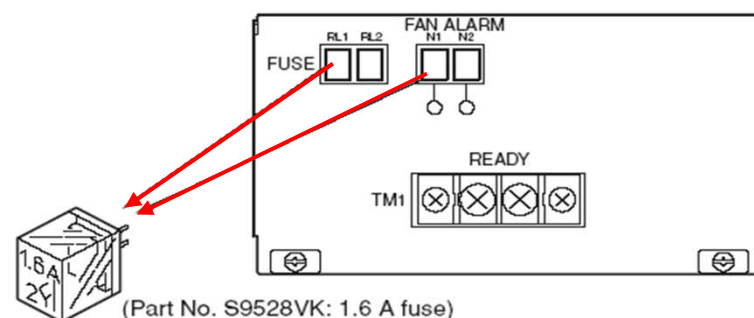
(Part No. S9528VK: 1.6 A fuse)

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Figure   Fuses on External Interface Unit of Rack Mountable LFCS2/LFCS, KFCS2/KFCS : LFCS2/LFCS, KFCS2/KFCS ❸
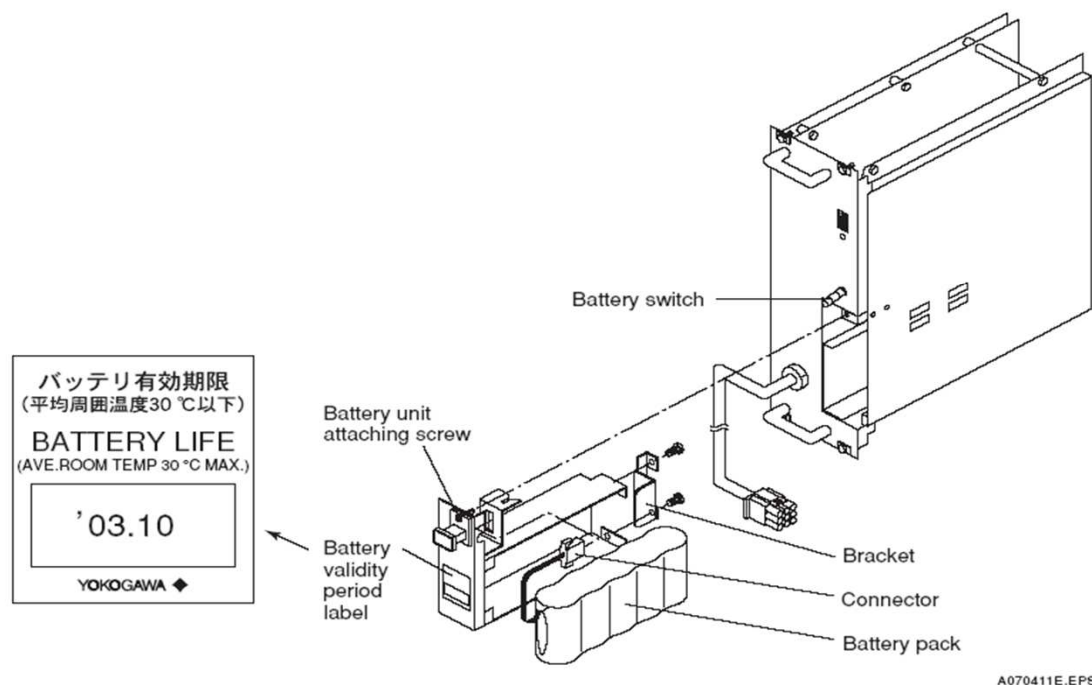
Replacing a Fan Unit : LFCS/KFCS

Replacing a Fan Unit : LFCS/KFCS

A battery pack is built into the power supply unit in order to back up the main memory of the processor card in case of a power failure.

The label on the faceplate of a battery unit shows the validity period, which is based on the condition where the ambient temperature is 30 deg C or less on average.

Replace the battery with a new one when the validity period expires.
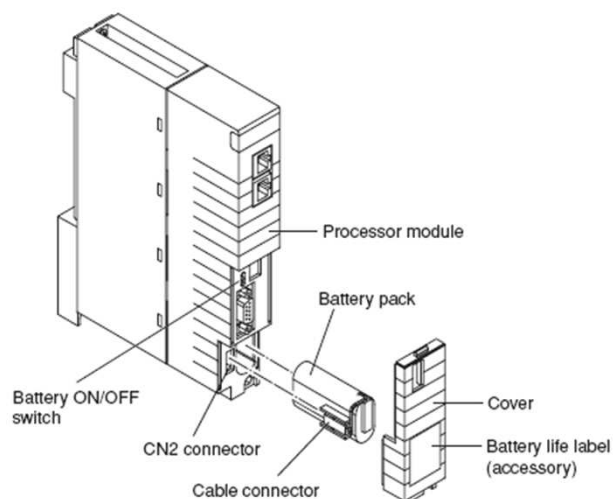
The figure below shows how a battery unit is installed.

バッテリ有効期限
(平均周囲温度30 ℃以下)

BATTERY LIFE
(AVE.ROOM TEMP 30 °C MAX.)

'03.10

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Battery switch

Battery unit attaching screw

Battery validity period label

Bracket

Connector

Battery pack

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Figure   Power Supply Unit and Battery Unit : LFCS2/LFCS, KFCS2/KFCS ③

Maximum Back-up Periode is 72 Hours !

Battery Life	Temperature
3 years	30 degrees or less
1½ year	40 degrees or less
9 months	50 degrees or less

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Replacing a Fan Unit : FFCS&FFCS-L

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A battery pack is built into the power supply unit in order to back up the main memory of the processor card in case of a power failure.

- Processor module
- Battery pack
- Battery ON/OFF switch
- CN2 connector
- Cable connector
- Cover
- Battery life label (accessory)

Maximum Back-up Periode is 72 Hours !

Battery Life	Temperature
3 years	30 degrees or less
1½ year	40 degrees or less
9 months	50 degrees or less

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Troubleshooting

Troubleshooting

● **Check VLnet Interface card**

      - Control bus interface (VF701)

        If the RCV lamp turn on but the SND lamp does not

        Check the dip switch, make sure that a VF701 card for PC is correctly set.

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Troubleshooting

● **The following error dialog is displayed upon restart after installing the VL-net driver.**

[Possible causes]

- VLnet interface card and VLnet connector are installed incorrect.
- VLnet cables are not installed. No terminator at bus ends.
- BUS 1 and BUS 2 are cross-connected.
- Improper station address setting.
- Either VLnet adapter driver VLnet protocol is not install.
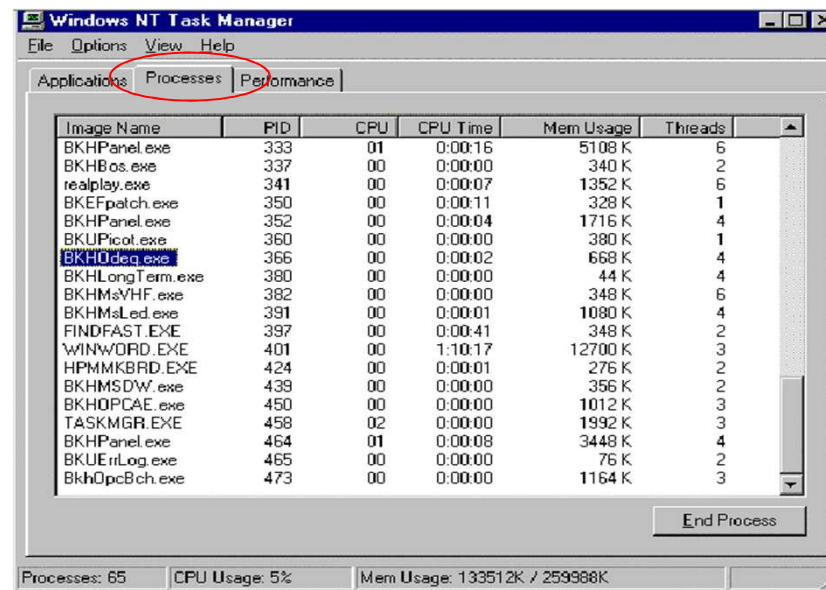- PCI slot is damaged.
- VL net interface card failure.

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HIS Communication Function

Troubleshooting

● **[Action]**

- Check the hardware, VLnet interface card, and VLnet cables.
- Check LED lamp status on the VLnet interface card.
  - Dual-redundant   : 4 lamps are on when normal.
  - Single bus   : 2 lamps for BUS 1 are on, BUS 2 are off
- Check the setting using " Network"
- Try inserting the VLnet interface card into another slot.

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Trouble shooting

- Equalization failures

1) Check if the network is correctly set.

2) Check if the database reference is correctly set.

3) Check if a proper project directory is declared for sharing with the name of CS1000PJT.

4) Check if BKHOdeq.exe is running.

    4.1) Start the task manager.

    4.2) Select the process tab and check if BKHOdeq.exe If not, restart the HIS, and report the error.

    4.3) If BKHOdeq.exe exits, select "View" – "Select column" and display the "Thread count".
        Check if the thread count of BKHOdeq.exe is 4 or 5. If not, restart HIS and report the error.

Image Name	PID	CPU	CPU Time	Mem Usage	Threads
BKHPanel.exe	333	01	0:00:16	5108 K	6
BKHBos.exe	337	00	0:00:00	340 K	2
realplay.exe	341	00	0:00:07	1352 K	6
BKEFpatch.exe	350	00	0:00:11	328 K	1
BKHPanel.exe	352	00	0:00:04	1716 K	4
BKUPicot.exe	360	00	0:00:00	380 K	1
BKHOdeq.exe	366	00	0:00:02	668 K	4
BKHLongTerm.exe	380	00	0:00:00	44 K	4
BKHMsVHF.exe	382	00	0:00:00	348 K	6
BKHMsLed.exe	391	00	0:00:01	1080 K	4
FINDFAST.EXE	397	00	0:00:41	348 K	2
WINWORD.EXE	401	00	1:10:17	12700 K	3
HPMMKBRD.EXE	424	00	0:00:01	276 K	2
BKHMSDW.exe	439	00	0:00:00	356 K	2
BKHOPCAE.exe	450	00	0:00:00	1012 K	3
TASKMGR.EXE	458	02	0:00:00	1992 K	3
BKHPanel.exe	464	01	0:00:08	3448 K	4
BKUErrLog.exe	465	00	0:00:00	76 K	2
BkhOpcBch.exe	473	00	0:00:00	1164 K	3

Windows NT Task Manager — File Options View Help — Applications Processes Performance — End Process — Processes: 65 — CPU Usage: 5% — Mem Usage: 133512K / 259988K

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-**Troubleshooting of errors in printing function**

Troubleshooting procedures when message printing and hard copy and not carried out and their recovery measure,

and printer error monitoring are described.

a) Troubleshooting when message is not printed

The follow are the two major reasons for not printing message

a. Problem on message printing function

b. Other problem (printer setting, connection, NT spooler error, system error)

First make sure that message printing is set on the HIS and then make sure that NT spooler function correctly.

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Trouble shooting

1. Set the printer on the HIS
Check if message are allocated on the message the allocation display. If not, set the message with the editor.

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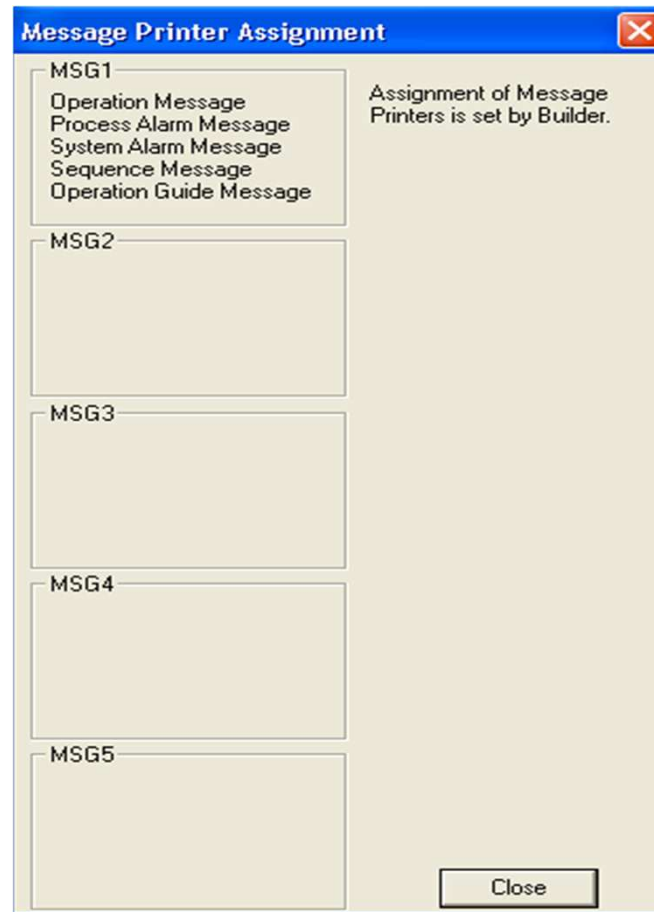
Trouble shooting

Check if printer checkbox of allocated message for the message output (MSG 1 to 5) is checked. If not, check the checkbox.
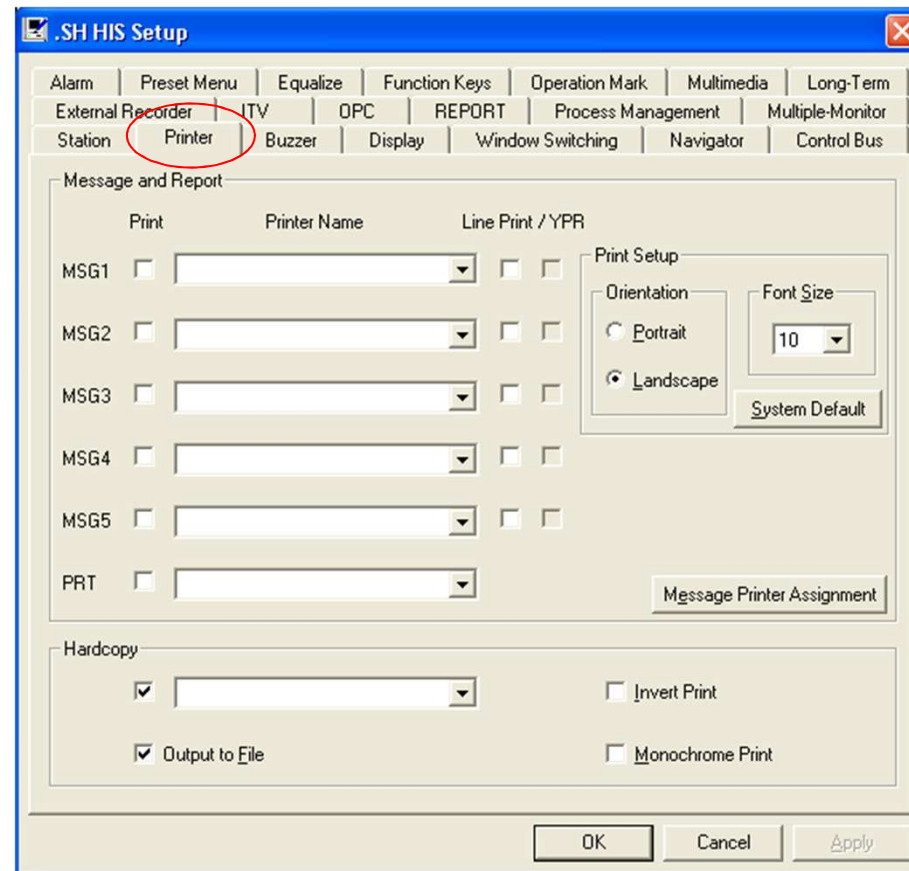
Check if the printer is allocated for the message output (MSG 1 to 5) .If not, allocated the printer.

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System message window cannot start

HIS Startup Error ✕

❌ Illegal Exit Code.
Please power off the computer.

[OK]

Check

1. Status of VL-net card.
2. VL-net driver.

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Error Message is Displayed

When installing the control bus driver right after removing the previously installed control bus driver without restarting the PC, an error message may be displayed.
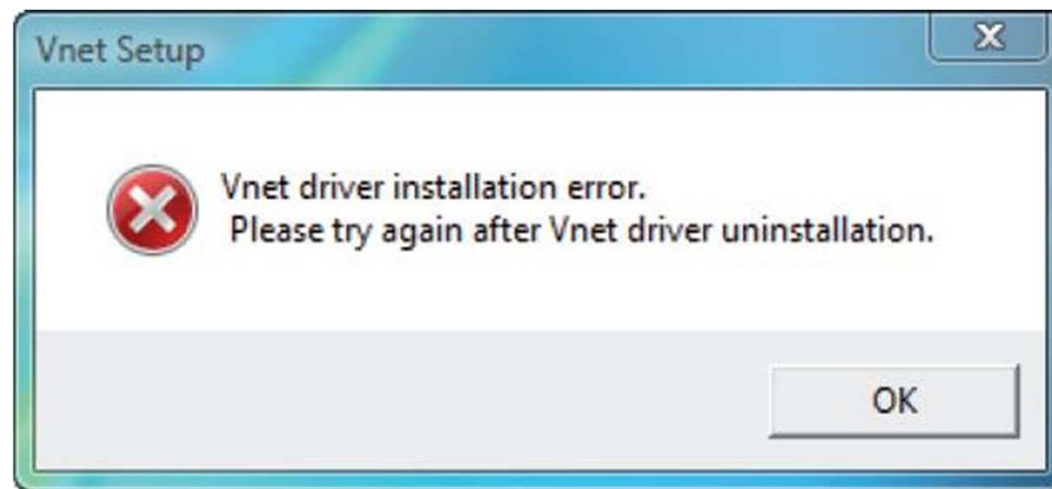
In this case, remove the installed control bus driver and restart the PC. And then install the control bus driver again.

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Installation is Successful but Driver Does not Work

If the installed driver cannot work properly, it may be caused by wrong bus connection or incorrect addressing.

In Windows Vista

The error can be found as a VLNIC error in [System] under [Windows Logs] of the Event Viewer.

In Windows XP and Windows Server 2003

The error can be found in System log of Event Viewer.
Double clicking the VLNIC error can display the error details.

When driver does not start up, it may be caused by VF701/VI701 card failure or effect of other devices.

In this case, you can try to replace the VF701/VI701 card or temporarily uninstall other devices from the PC.

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Driver is installed successfully but Vnet card is not recognised

In Windows Vista

The error can be found as a VLNIC error in [System] under [Windows Logs] of the Event Viewer.

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In Windows Vista

The error can be found in System log of Event Viewer.
Double clicking the VLNIC error can display the error details.

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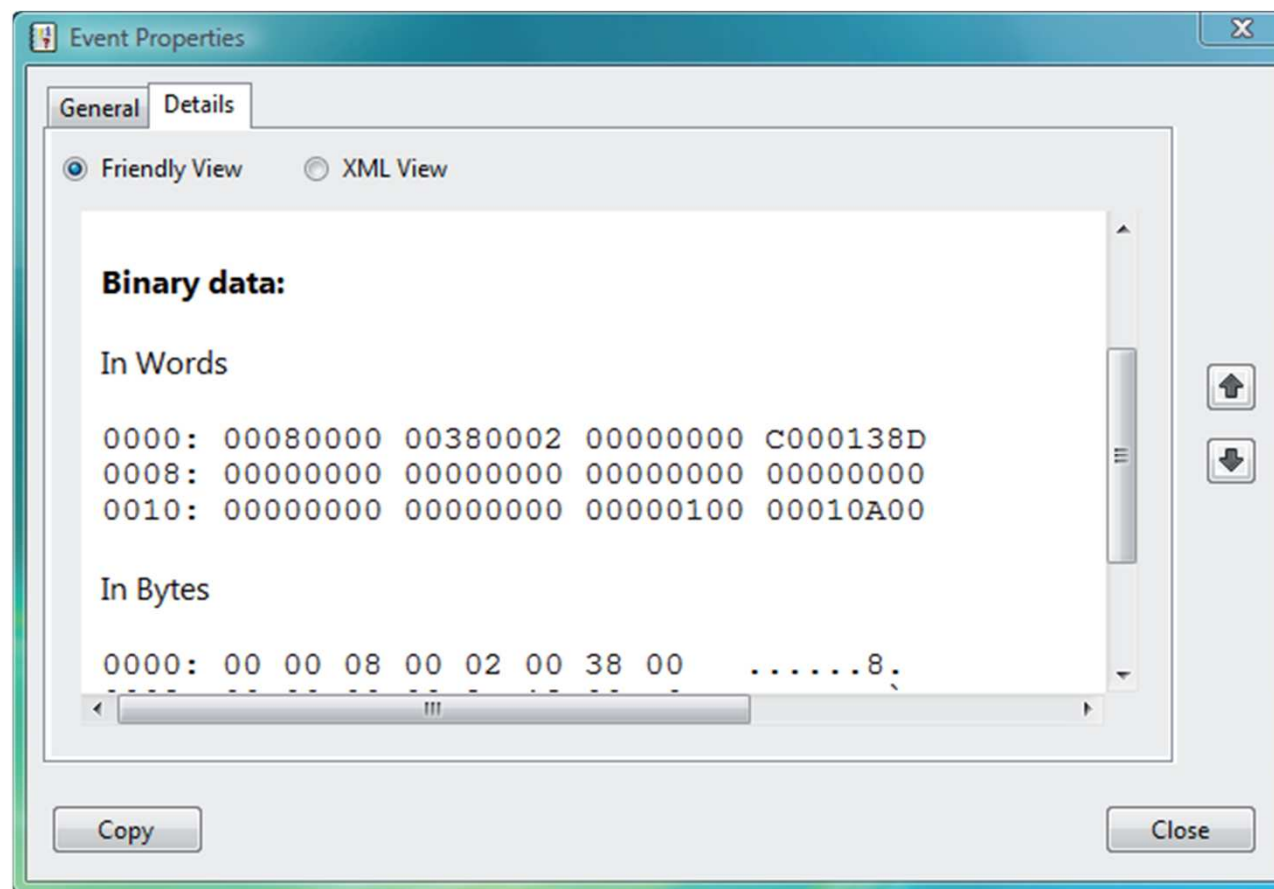
Driver is installed successfully but Vnet card is not recognised

In Windows XP and Windows Server 2003

When the driver does not work properly, the bus connection might be wrong or the address settings might have mistakes. The errors can be viewed in "System Log" of "Event Viewer."

[Control Panel] → [Administrative Tools] → [Event Viewer]

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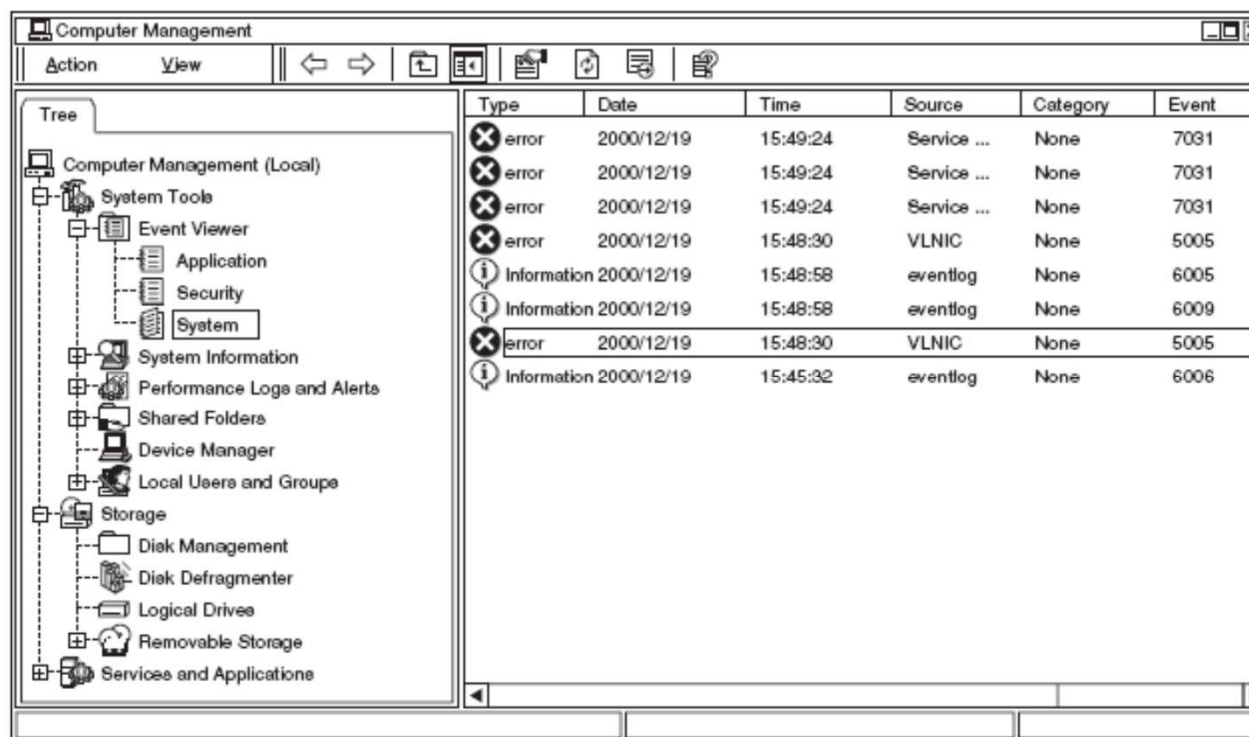
Driver is Installed Successfully But Does not Work

Double click VLNIC error event, the Event Properties dialog displays.
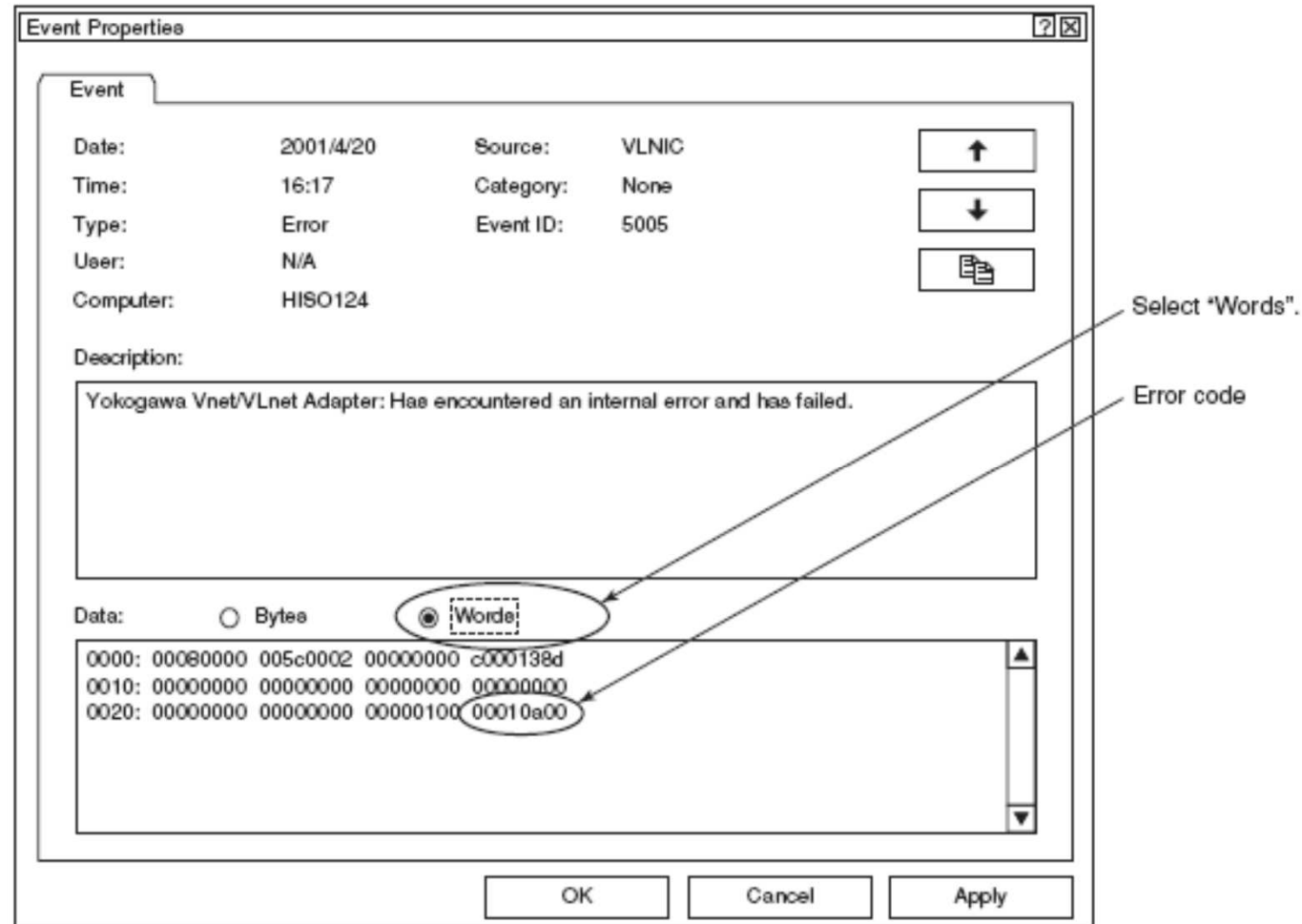
Driver is installed successfully but Vnet card is not recognised

In Windows XP and Windows Server 2003

After obtaining the error code, the error details can be found in the table below.
If the error code indicates that the error is caused by wrong bus configuration or addressing, the problem may be solved by reconfiguration or readdressing. After reconfiguration or readdressing, the PC needs to be restarted.

Table Error Codes of Control Bus Driver

Code	Description
000101**	RAM parity error (VF701/VI701 card abnormal)
000102**	RAM Read/Write error (VF701/VI701 card abnormal)
000109**	Identical Address
00010a**	Bus configuration error (Incorrect connection)
00010b**	Parity error (DIP switches for station number)
00010c**	Parity error (DIP switches for domain number)
00010d**	Incorrect station number set by DIP switches
00020013	Illegal station number (may be caused by incorrect bus connection)

(Note) The affixed ** is a two-digit number that indicates VF701 or VI701. 00 stands for VF701; the other stands for VI701.

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If the PC is not restarted after removing the Vnet/IP Open Communication Driver, and then install a new driver for Vnet/IP Open Communication, an error message box like follows will be displayed.

Under this circumstance, it is necessary to remove the installed Vnet/IP Open Communication Driver and restart the PC. And then install the new driver again.
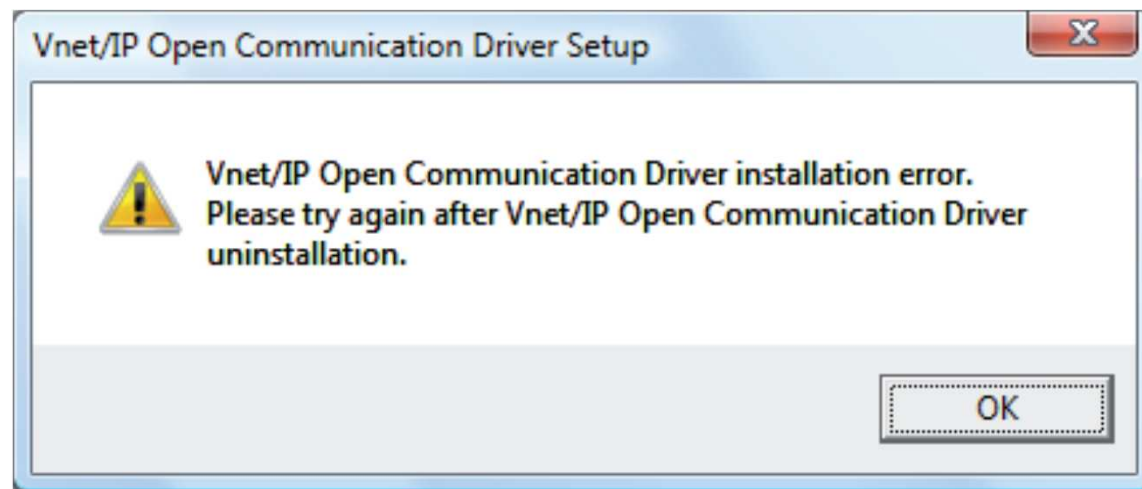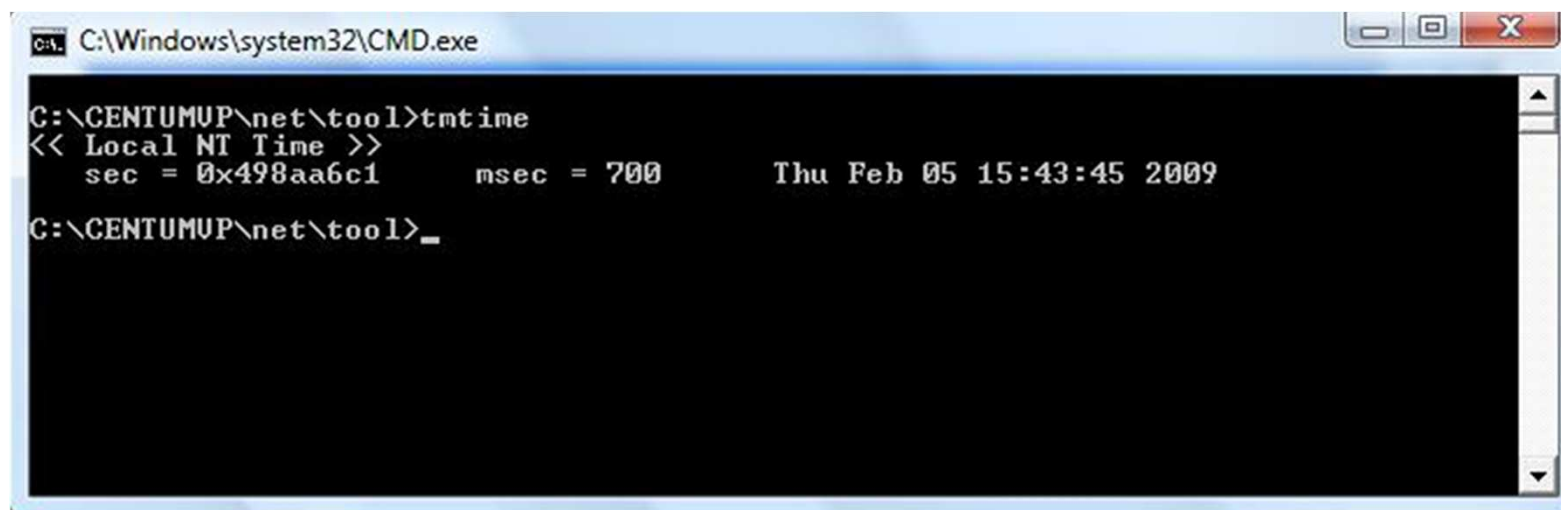
Vnet Utility Commands

These commands are installed under [CENTUMVP\NET\Tool].
These commands are only activated from the DOS command prompt.

Command	Function
tmtime	Displays the network time
vhping	Performs the connection test to the Vnet/VLnet network.
vhpsts	Displays the station status.
vhploopback	Loopback check

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tmtime

Tmtime – Displaying the network time, time master station and system time of Vnet/IP on which HIS is connected.

Syntax: tmtime
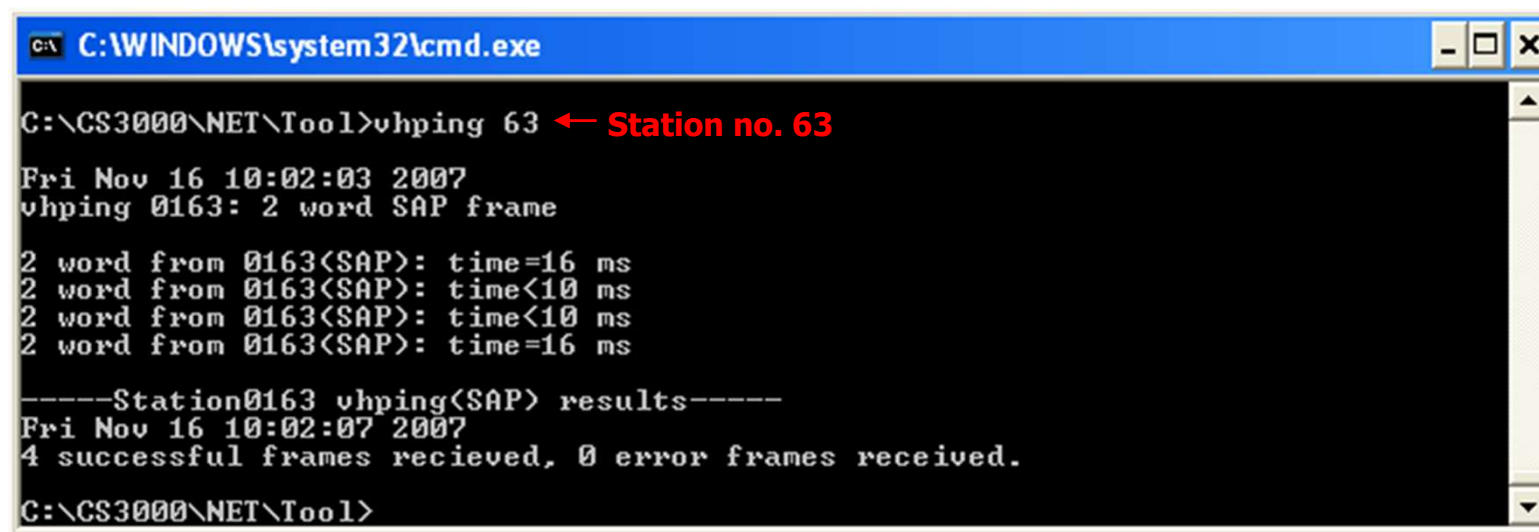
```
C:\Windows\system32\CMD.exe

C:\CENTUMVP\net\tool>tmtime
<< Local NT Time >>
   sec = 0x498aa6c1      msec = 700       Thu Feb 05 15:43:45 2009

C:\CENTUMVP\net\tool>_
```

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vhping

vhping - Performs the connection test to the Vnet/VLnet network. Sends a GET frame to specified stations on the Vnet/VLnet repeatedly, and displays the response times.

Syntax : vhping StationNumber

Usage example : vhping 63

```
C:\WINDOWS\system32\cmd.exe                               _ □ ×

C:\CS3000\NET\Tool>vhping 63  ← Station no. 63

Fri Nov 16 10:02:03 2007
vhping 0163: 2 word SAP frame

2 word from 0163(SAP): time=16 ms
2 word from 0163(SAP): time<10 ms
2 word from 0163(SAP): time<10 ms
2 word from 0163(SAP): time=16 ms

------Station0163 vhping(SAP) results------
Fri Nov 16 10:02:07 2007
4 successful frames recieved, 0 error frames received.

C:\CS3000\NET\Tool>
```

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vhpsts

vhpsts - Displays the information held in the VI701 card and the live list information for all stations..

Syntax : Vhpsts

Usage example : vhpsts

```
C:\WINDOWS\system32\cmd.exe                                          _ □ ✕

<< LiveList Information >>
My Station Address    : 0140 (Domain= 01, Station= 64)
Bus status            : c0   Bus1     : Ready
                             Bus2     : Ready
                             Modem1   : Enable
                             Modem2   : Enable
VEHICLE status        : 01   VEHICLE : Ready
Token status          : 01   Token   : Received
CPU sts       (32- 1): 00000001    .... ....  .... ....  .... ....  .... ...1
CPU sts       (64-33): c0000000 11.. ....  .... ....  .... ....  .... ....
VEHICLE sts   (32- 1): 00000001    .... ....  .... ....  .... ....  .... ...1
VEHICLE sts   (64-33): c0000000 11.. ....  .... ....  .... ....  .... ....
Reserved sts  (32- 1): 00000000    .... ....  .... ....  .... ....  .... ....
Reserved sts  (64-33): 00000000    .... ....  .... ....  .... ....  .... ....
Bus recover sts(32- 1): 00000000   .... ....  .... ....  .... ....  .... ....
Bus recover sts(64-33): 00000000   .... ....  .... ....  .... ....  .... ....


=========> Fri Nov 16 10:06:04 2007



C:\CS3000\NET\Tool>_
```

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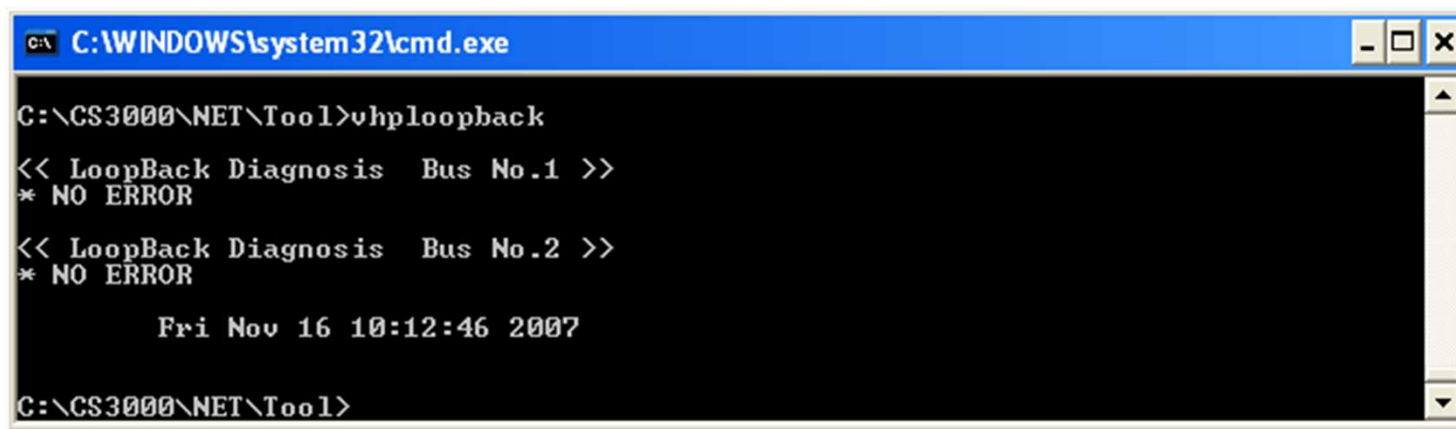
vhploopback

vhploopback – Carries out self-diagnostics of the functions of the Vnet/VLnet adapter by external loopback check.

Syntax   :   Vhploopback

Usage example   :   vhploopback

```
C:\WINDOWS\system32\cmd.exe

C:\CS3000\NET\Tool>vhploopback

<< LoopBack Diagnosis   Bus No.1 >>
* NO ERROR

<< LoopBack Diagnosis   Bus No.2 >>
* NO ERROR

        Fri Nov 16 10:12:46 2007

C:\CS3000\NET\Tool>
```

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Troubleshooting of Overall Windows

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Windows NT Troubleshooting Tools

Command	Function
ipconfig	Displays the current TCP/IP network configuration data.
ping	Inspects if the TCP/IP is configured properly and if the remote TCP/IP system is usable.

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Ipconfig

Confirm the TCP/IP configuration. Make sure the VLnet/Vnet adapter is displayed and check if the displayed contents match the settings provided during the network setting.

```
C:\WINDOWS\system32\cmd.exe

C:\CS3000\NET\Tool>ipconfig /all

Windows IP Configuration

        Host Name . . . . . . . . . . . . : HIS0164
        Primary Dns Suffix  . . . . . . . :
        Node Type . . . . . . . . . . . . : Unknown
        IP Routing Enabled. . . . . . . . : No
        WINS Proxy Enabled. . . . . . . . : No

Ethernet adapter VnetIPOpen:

        Connection-specific DNS Suffix  . :
        Description . . . . . . . . . . . : Vnet/IP Open Communication Driver (B
US2)
        Physical Address. . . . . . . . . : 00-00-64-85-34-5F
        Dhcp Enabled. . . . . . . . . . . : No
        IP Address. . . . . . . . . . . . : 192.168.129.193
        Subnet Mask . . . . . . . . . . . : 255.255.255.0
        Default Gateway . . . . . . . . . :

Token Ring adapter VnetIP:

        Connection-specific DNS Suffix  . :
        Description . . . . . . . . . . . : Yokogawa Vnet/VLnet Adapter #2
        Physical Address. . . . . . . . . : 00-00-00-00-01-40
        Dhcp Enabled. . . . . . . . . . . : No
        IP Address. . . . . . . . . . . . : 172.16.1.64
        Subnet Mask . . . . . . . . . . . : 255.255.0.0
        Default Gateway . . . . . . . . . :

Ethernet adapter Ethernet:

        Connection-specific DNS Suffix  . :
        Description . . . . . . . . . . . : Intel(R) 82566DM Gigabit Network Con
nection
        Physical Address. . . . . . . . . : 00-0F-FE-48-6E-C2
        Dhcp Enabled. . . . . . . . . . . : No
        IP Address. . . . . . . . . . . . : 172.17.1.64
        Subnet Mask . . . . . . . . . . . : 255.255.0.0
        Default Gateway . . . . . . . . . :

C:\CS3000\NET\Tool>
```


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Ipconfig

Ping

Check if the intended host machine is connected at IP level by specifying its IP address

```
C:\WINDOWS\system32\cmd.exe                                      _ □ ×

C:\CS3000\NET\Tool>ping 192.168.129.192

Pinging 192.168.129.192 with 32 bytes of data:

Reply from 192.168.129.192: bytes=32 time<1ms TTL=128
Reply from 192.168.129.192: bytes=32 time<1ms TTL=128
Reply from 192.168.129.192: bytes=32 time<1ms TTL=128
Reply from 192.168.129.192: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.129.192:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

```
C:\WINDOWS\system32\cmd.exe                                      _ □ ×

C:\CS3000\NET\Tool>ping /?

Usage: ping [-t] [-a] [-n count] [-l size] [-f] [-i TTL] [-v TOS]
            [-r count] [-s count] [[-j host-list] ¦ [-k host-list]]
            [-w timeout] target_name

Options:
    -t             Ping the specified host until stopped.
                   To see statistics and continue - type Control-Break;
                   To stop - type Control-C.
    -a             Resolve addresses to hostnames.
    -n count       Number of echo requests to send.
    -l size        Send buffer size.
    -f             Set Don't Fragment flag in packet.
    -i TTL         Time To Live.
    -v TOS         Type Of Service.
    -r count       Record route for count hops.
    -s count       Timestamp for count hops.
    -j host-list   Loose source route along host-list.
    -k host-list   Strict source route along host-list.
    -w timeout     Timeout in milliseconds to wait for each reply.

C:\CS3000\NET\Tool>_
```

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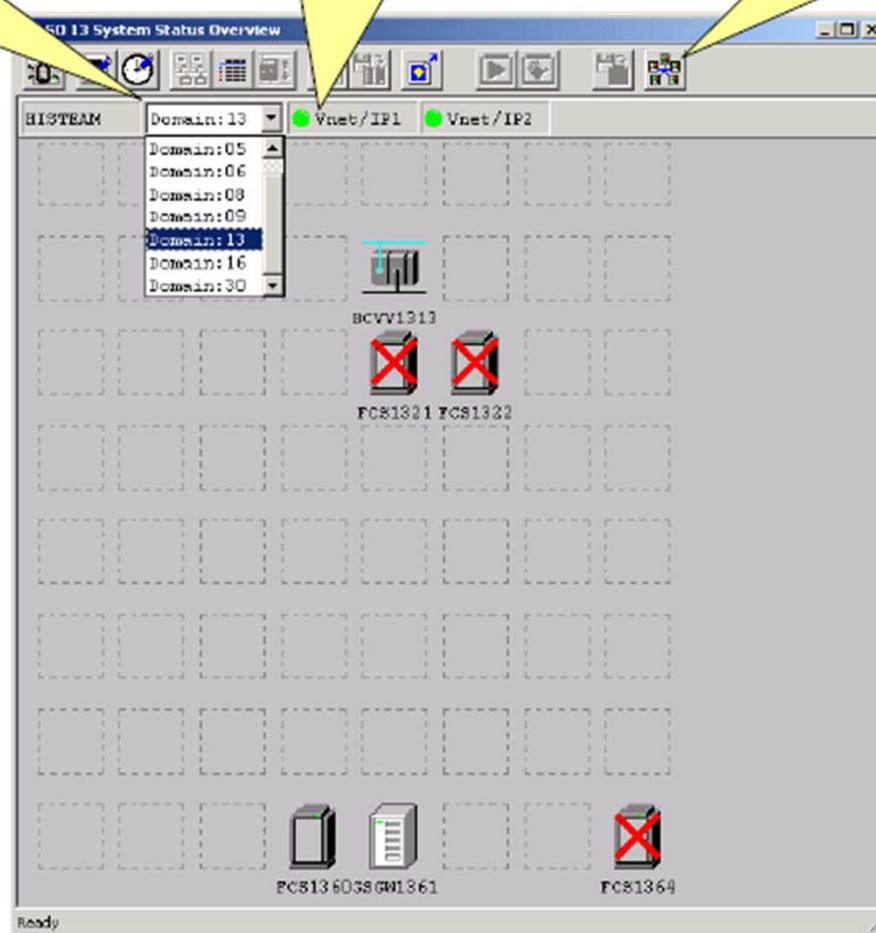
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Network Status Display Dialog Box

System Status Overview

The domain to check can be selected from a list, in order to open the domain directly.
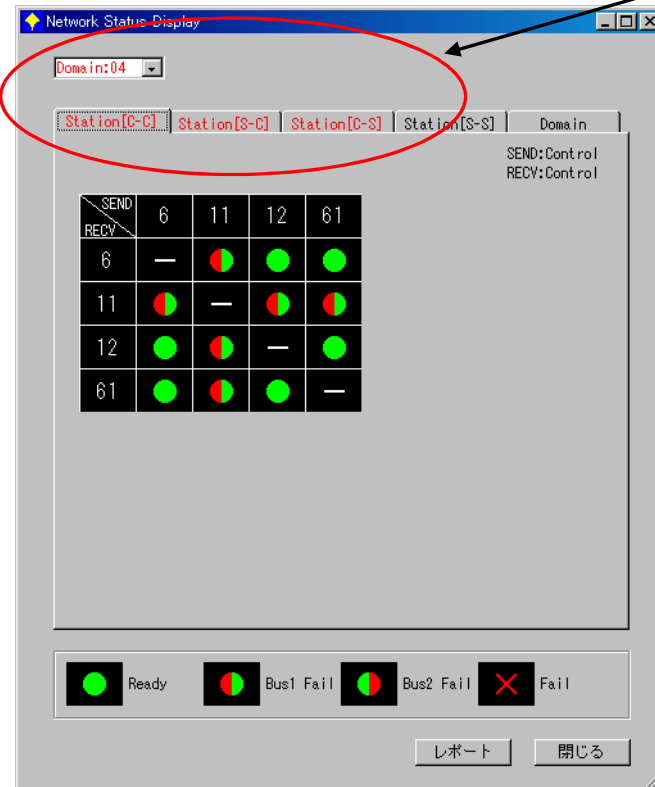
Bus name: Vnet/IP

Open button for network status display dialog box
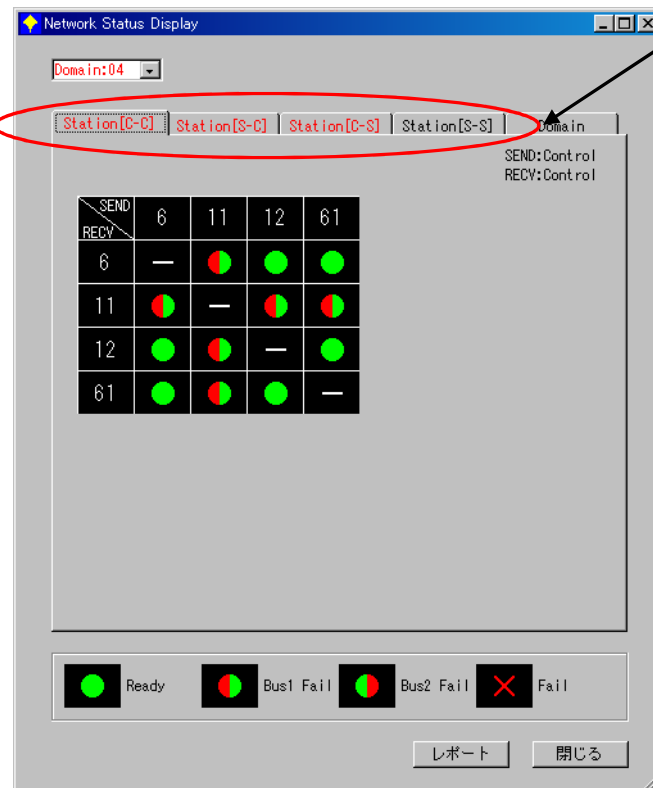
Network Status Display

Understanding the Network Status Display Window

(1) Turns red if any error exist

Network Status Display

Understanding the Network Status Display Window
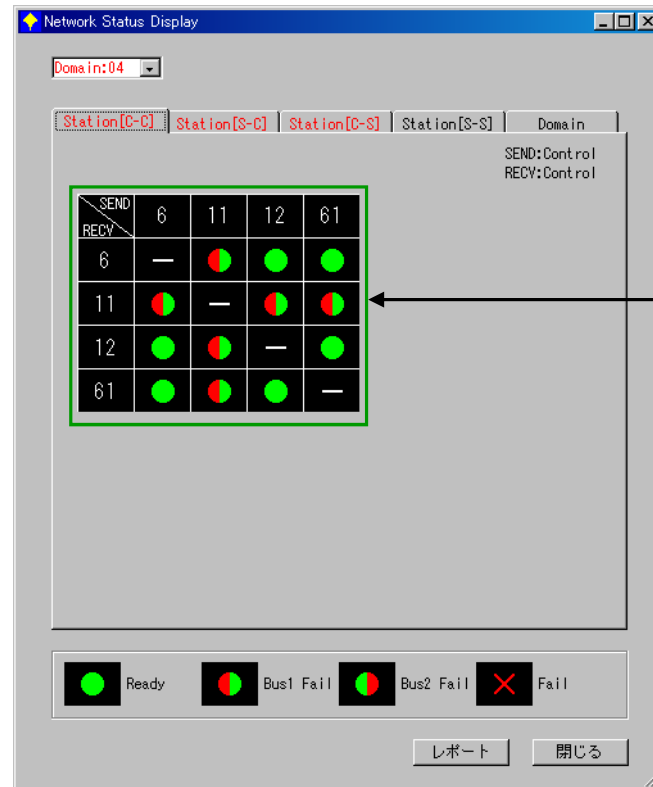

(2) Communication Status among the stations
- **control side – control side**
- **standby side – control side**
- **control side – standby side**
- **standby side – standby side**

Only the communication status on the control side is displayed for a single control station or HIS.

For duplexed control stations, the communication status is displayed on both the control side and standby side.

Network Status Display

Understanding the Network Status Display Window

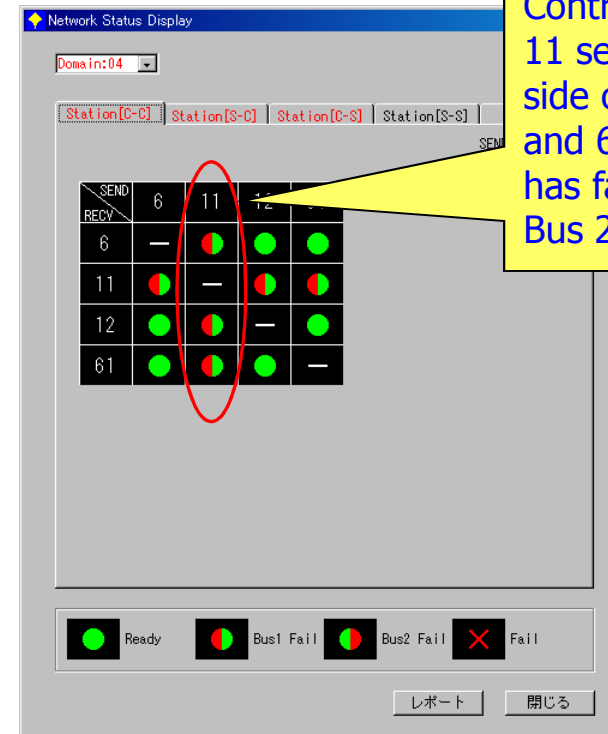(3) Status of buses among stations

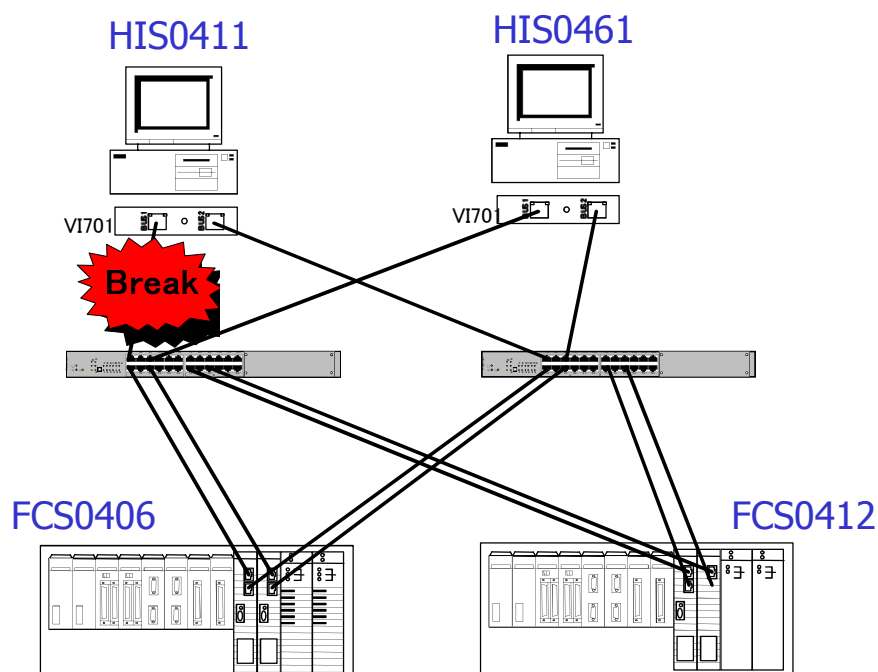# *Network Status Display - Example*

Normal

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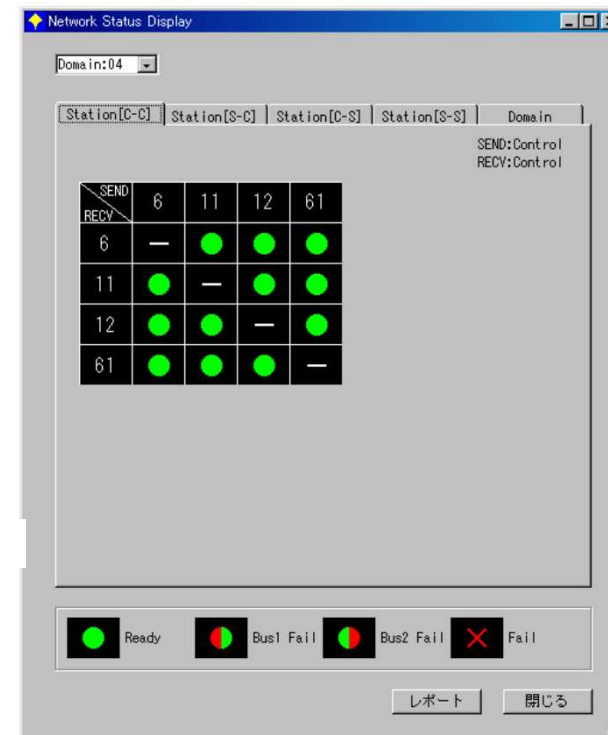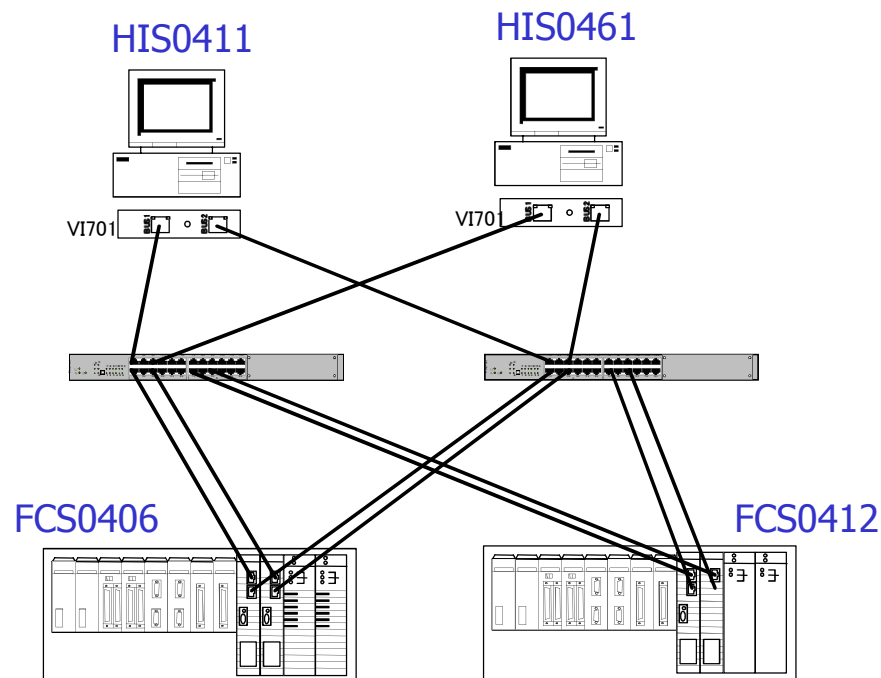
Network Status Display - Example
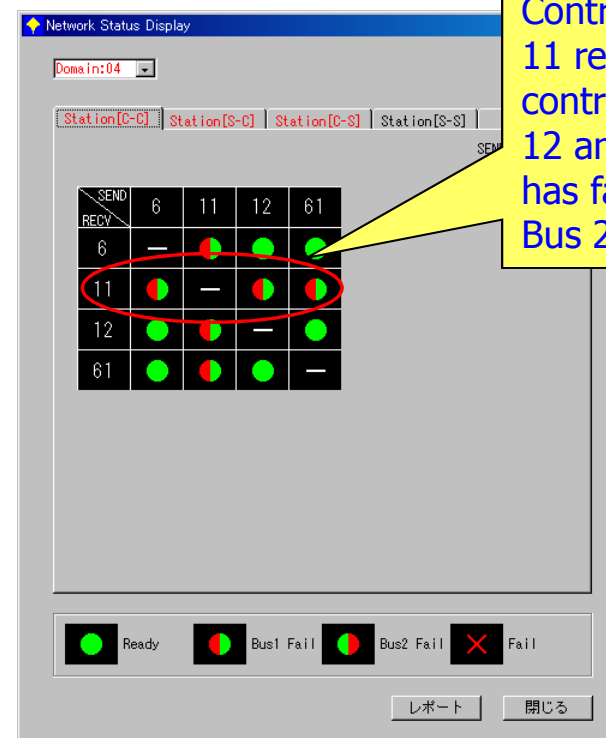

Control to Control

Control side of Station 11 sending to control side of Stations 6, 12 and 61 through Bus 1 has failed, while through Bus 2 is normal

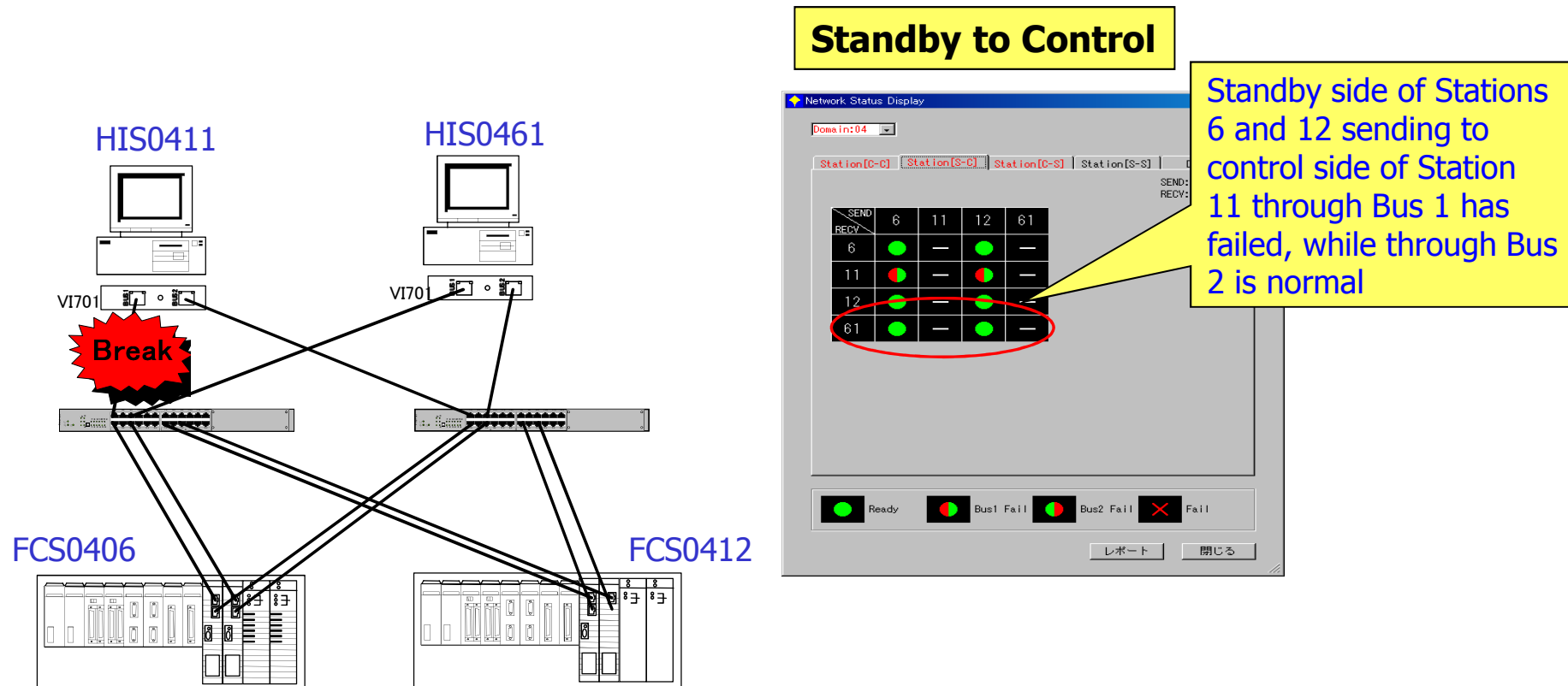# *Network Status Display - Example*
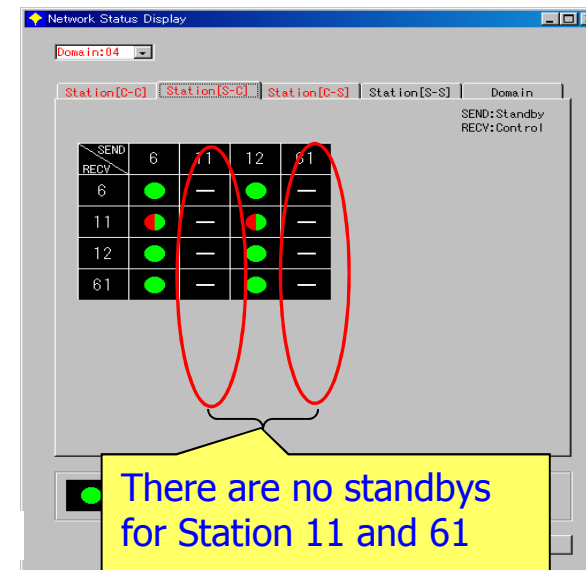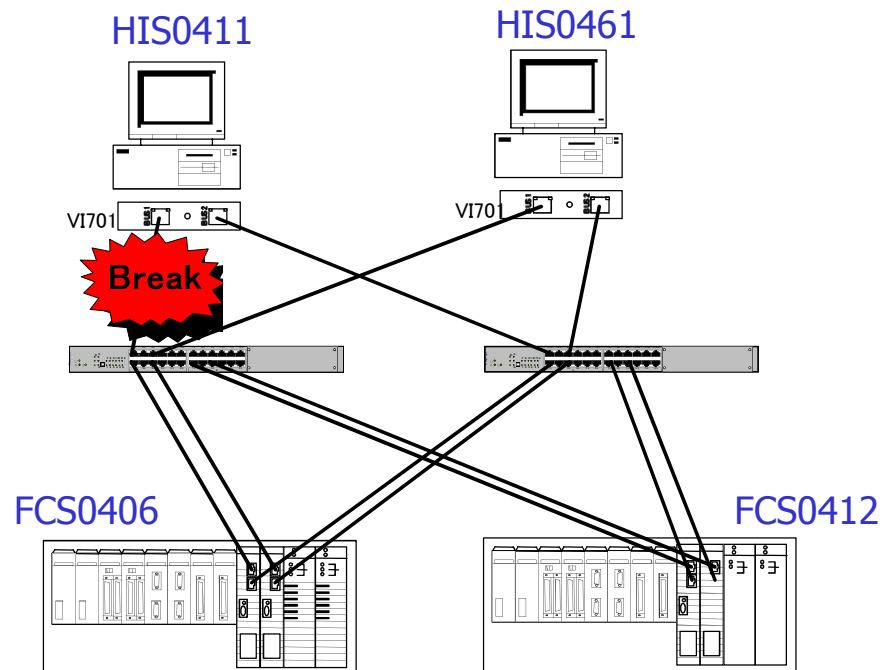

Control to Control

Control side of Station 11 receiving from control side of Stations 6, 12 and 61 through Bus 1 has failed, while through Bus 2 is normal

HIS0411   HIS0461

Break

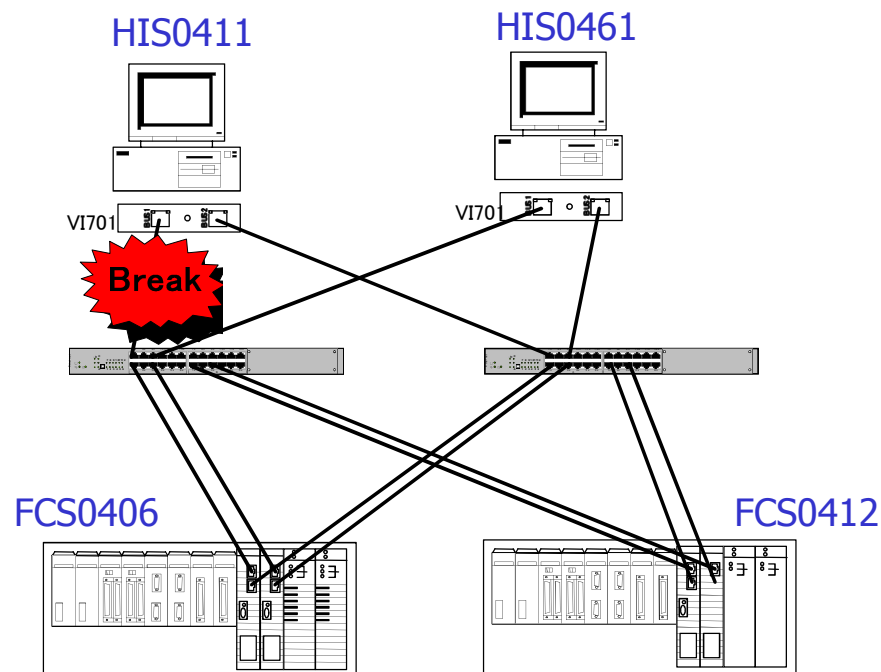FCS0406   FCS0412

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Network Status Display - Example

Standby to Control

Standby side of Stations 6 and 12 sending to control side of Station 11 through Bus 1 has failed, while through Bus 2 is normal

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Network Status Display - Example

Standby to Control

HIS0411

HIS0461

VI701

VI701

Break

FCS0406

FCS0412

Network Status Display

Domain:04

Station[C-C] | Station[S-C] | Station[C-S] | Station[S-S] | Domain

SEND:Standby
RECV:Control

SEND / RECV	6	11	12	61
6	●	—	●	—
11	◐	—	◐	—
12	●	—	●	—
61	●	—	●	—

There are no standbys
for Station 11 and 61

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Network Status Display - Example

Control to Standby

HIS0411

HIS0461

VI701

VI701

Break

FCS0406

FCS0412

Network Status Display

Domain:04

Station[C-C] Station[S-C] Station[C-S] Station[

SEND / RECV	6	11	12	61
6	🟢	🔴	🟢	🟢
11	—	—	—	—
12	🟢	🔴	🟢	—
61	—	—	—	—

🟢 Ready   🔴 Bus1 Fail   🔴 Bus2 Fail   ✕ Fail

レポート   閉じる

Control side of Station 11 sending to standby side of Stations 6 and 12 through Bus 1 has failed, through Bus is normal

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Network Status Display - Example

Communication Status Display Among Domains

Check whether or not each domain in a Vnet/IP network is normally performing reception from other domains.

Abnormal domain will be displayed in red.

Figure Network Status Display Dialog Box (Domain Tab)

C020003E.EPS

Information to be gathered in case of trouble FCS Tool

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Saving the Error Log

When a problem occurs while using a HIS, check the situation in which the problem occurred and use the logsave.bat command to save the HIS settings and error information. This log, if saved immediately after the problem occurred, usually makes it much easier to analyze the problem.

If the log save is delayed or the system is rebooted, information such as the date and time of the error and information in the case where the system has been rebooted are necessary.

Saving the Error Log

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There are three ways to do it:

1. Window Explorer – **C:\CENTUMVP\his\tool\logsave.bat**

2. Command Prompt – Type cd **C:\CENTUMVP\his\tool**, press enter on the keyboard, type logsave followed by enter on the keyboard

3. Click Start → **Programs** → **YOKOGAWA CENTUM** → **Maintenance** → **Logsave**

```
Logsave
--- bknloopback ---
--- tmtun ---
--- vhpteleco ---
--- dctdump -t ---
--- dctdump -n ---
--- Coping UnetDriverSetupLog ---
        1 file(s) copied.
--- OpenMAC Driver Information ---
        1 file(s) copied.
The system cannot find the file specified.
Listing Spool Directory
Making Windows Diagnostic Report
Saving Registry
Coping Dr.Watson Information Files (Windows 2000)
The system cannot find the path specified.
The system cannot find the path specified.
Coping Dr.Watson Information Files (Windows XP)
C:\CS3000\Temp\drwtsn32.log
1 File(s) copied
C:\CS3000\Temp\user.dmp
1 File(s) copied
CP Package Report
------ LOGSAVE COMPLETED ------
SAVE TO: C:\DOCUME~1\ADMINI~1\LOCALS~1\Temp\CENTUM_SAVE
Press any key to continue . . .
```

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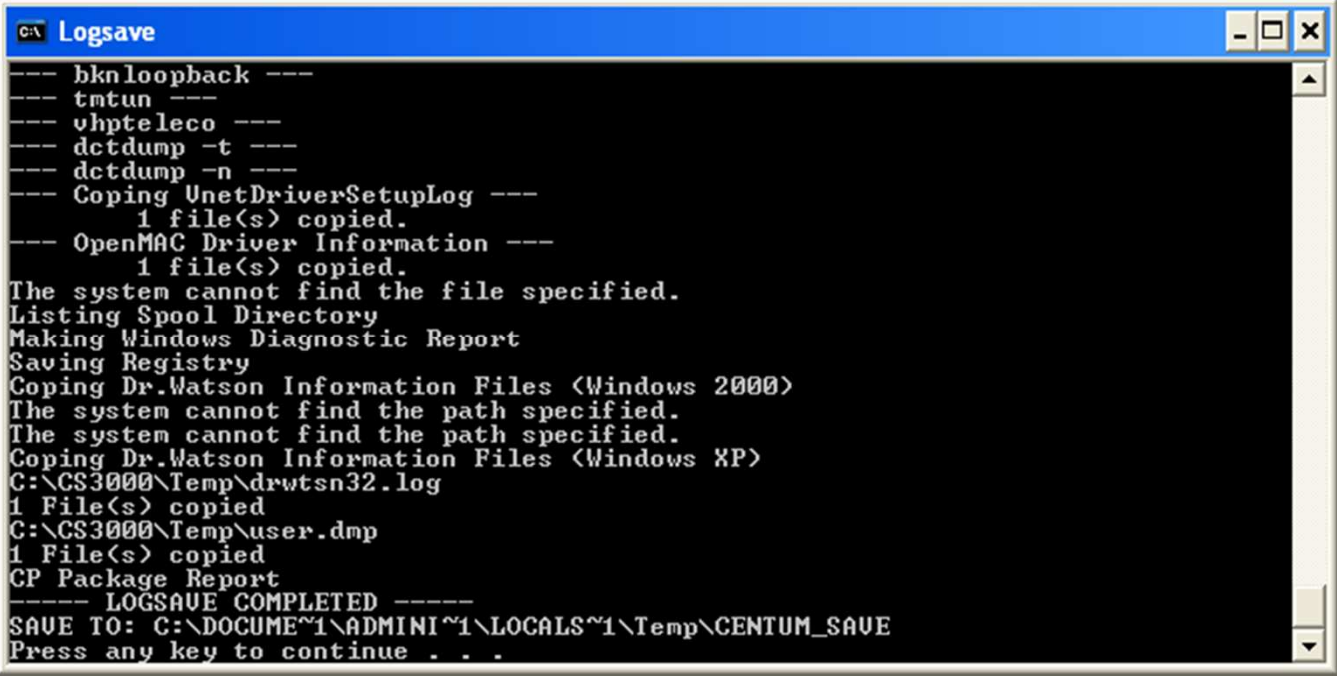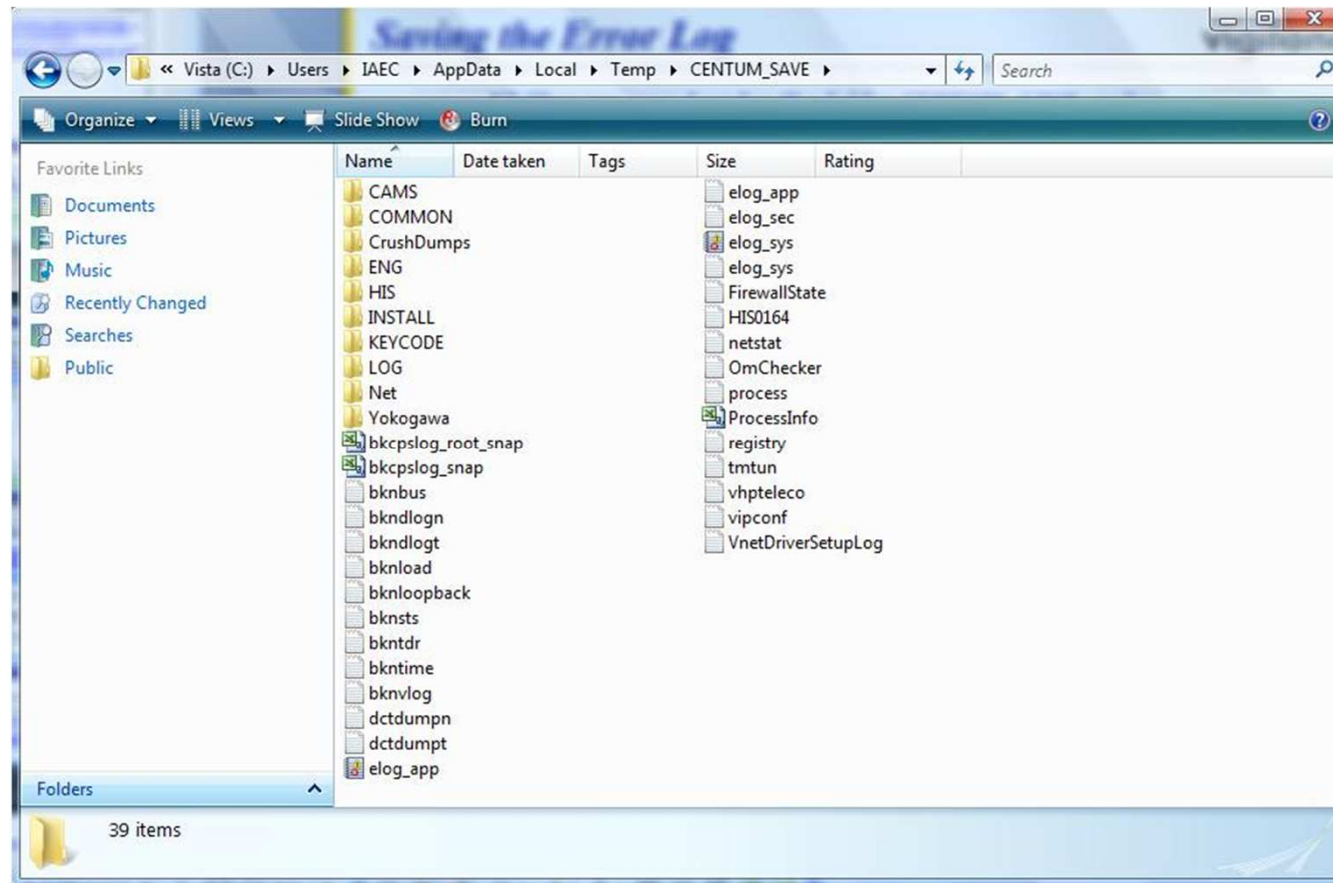٠٩١٢٣١٨٢٧٣۴

Saving the Error Log

All files are saved under the folder CENTUM_SAVE under
C:\User\Centum\AppData\Local\Temp\CENTUM_SAVE

**To reveal Local Settings, click on Tools → Folder Options → View Tab
→ Show hidden files and folders**

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View Window Operation Log
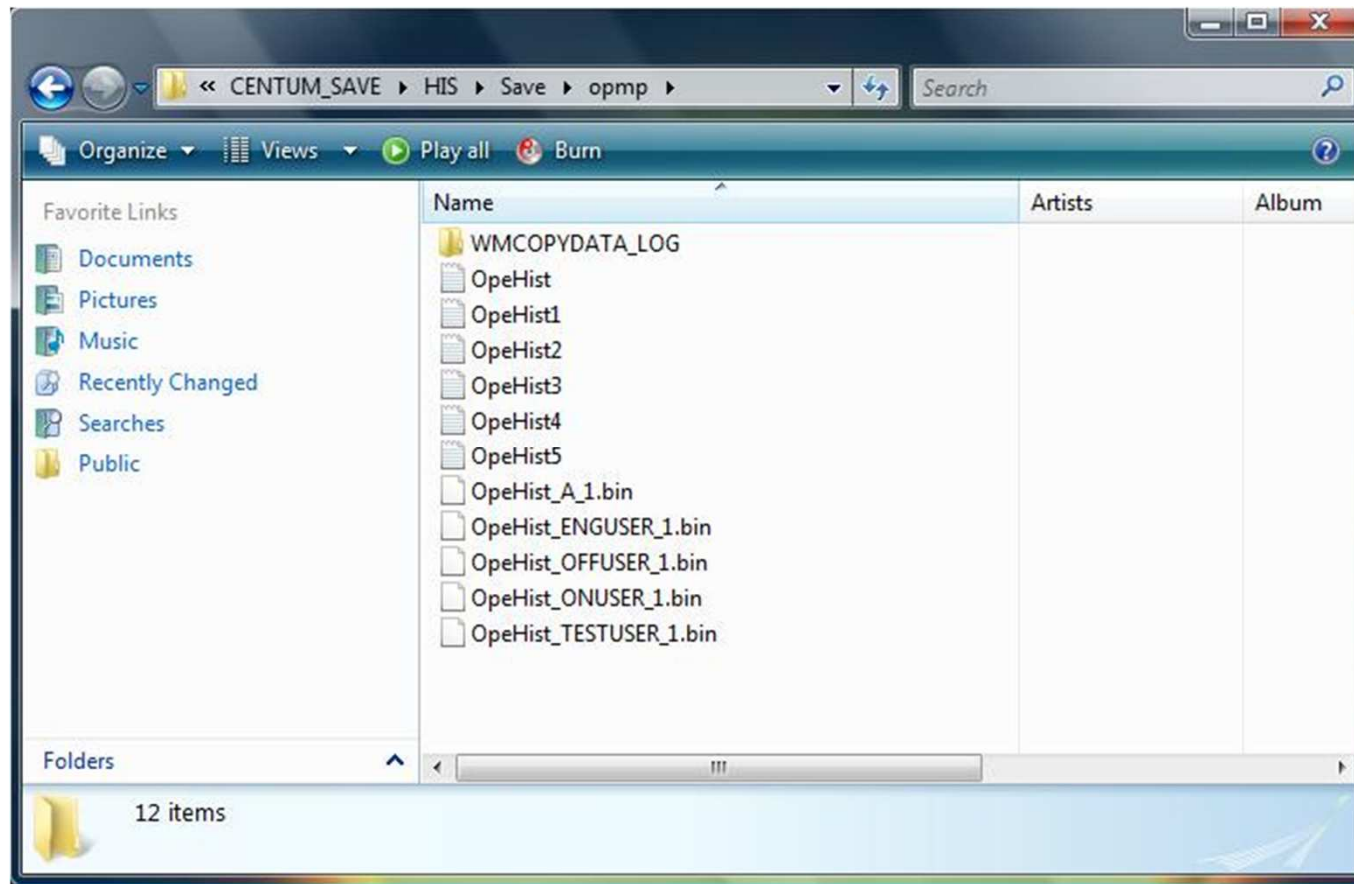
Stored in
C:\User\Centum\AppData\Local\Temp\CENTUM_SAVE\HIS\Save\Opmp
OpeHist.log   Current window operation log (latest)
OpeHist1.log   Previous window operation log
OpeHist2.log   Window operation log before the previous log
OpeHist3.log   Window operation log, two logs before the previous log (oldest)

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END OF PRESENTATION

Thank you for your attention

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Note…

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Laboratory

Backup :   1. Backup Project

2. Backup folder CENTUMVP

3. Backup Registry

4. Uninstall CENTUMVP program

Restore :   1. Restore folder CENTUMVP

2. Restore Project

3. Restore registry

4. Install CENTUMVP program by don't use keycode disk

5. Download project to HISs and FCSs

CENTUM VP

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