Pulling the Curtain on Airport Security

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@xssniper

How to get put on the no-fly list…

Why are you doing this?

- Just an average Joe
- Interest in ICS, Embedded and Medical devices
- I travel a lot

LOFTUS

GATORADE
G
FRUIT PUNCH
20 FL OZ (1.25 PT) 591 mL
LOFTUS

Lessons Learned by a Young Butterbar

- Show respect
- Accept Responsibility
- Trust, but Verify

Show me the Money… (budget.house.gov)

- > 50,000 people at more than 400 airports across the country and an annual budget of $7.39 billion (2014)

- TSA receives about $2 billion a year in offsetting collections under current law, through air-carrier and aviation-passenger security fees. The largest of the fees, in terms of total collections, is the Aviation Passenger Security Fee (sometimes called the September 11th Security Fee), which brings in about $1.7 billion a year.

- By law, the first $250 million of passenger-security fees is set aside for the Aviation Security Capital Fund, which provides for airport-facility modifications and certain security equipment

Show me the Money…

One guy

no budget

and a laptop

Disclosure

All issues in this presentation were reported to DHS

via ICS-CERT >6 months ago

Response?

- Our software “cannot be hacked or fooled”
- “add their own software and protections.”
- <silence>
- Spoke with Morpho last week

Scenarios

(1) TSA doesn’t know about the security issues in their software

(2) TSA knew about the security issues, developed their own custom fixes, never told the vendors… and is hording embedded zero day vulnerabilities and leaving other organizations exposed?

Recommended Security Guidelines for Airport Planning, Design and Construction

Transportation
Security
Administration

Revised: May 2011

Transportation
Security
Administration

CHECKPOINT DESIGN GUIDE (CDG)

Revision 4.0

August 29, 2012

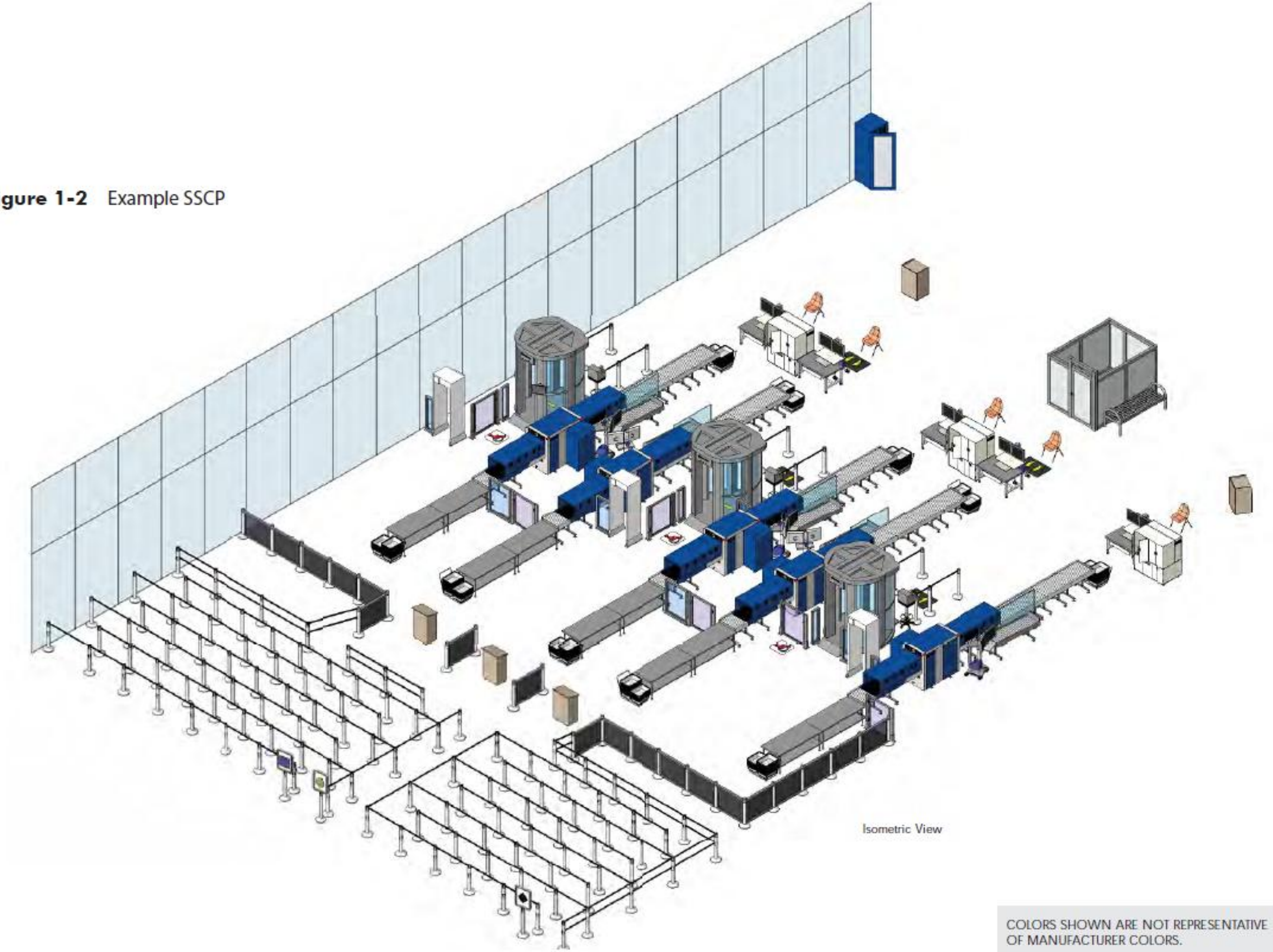
Prepared for the
Transportation Security Administration (TSA)

Office of Security Capabilities (OSC)

Prepared by:

[redacted]

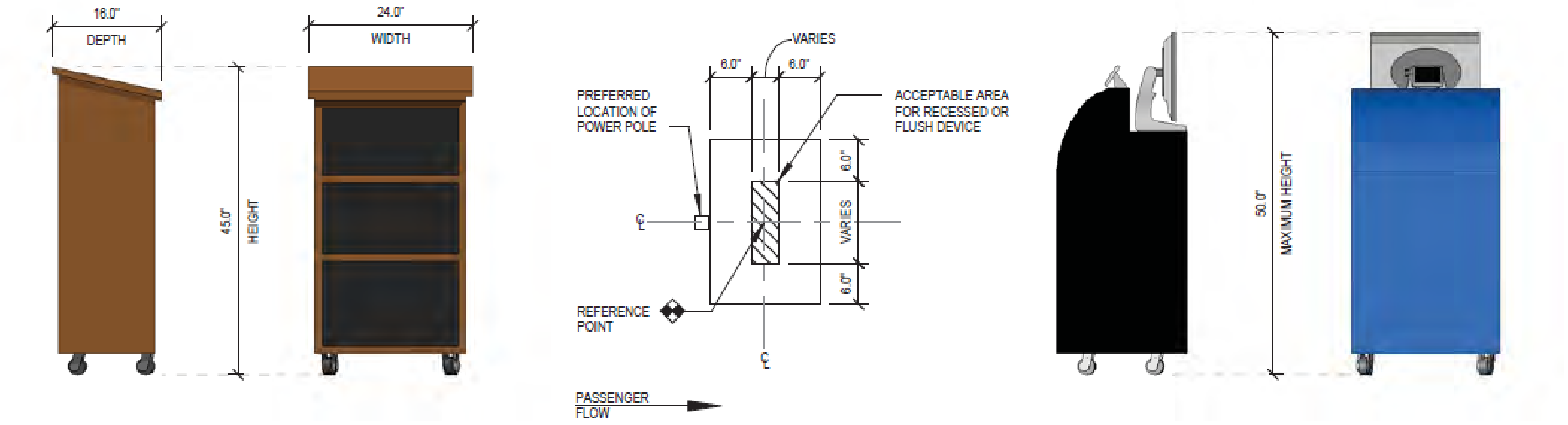
Figure 1-2 Example SSCP



COLORS SHOWN ARE NOT REPRESENTATIVE OF MANUFACTURER COLORS.

Figure 2-8 TDC Podium & CAT/BPSS

Equipment	Quantity	Power Requirements	IT Requirements	Additional Information
TDC Podium CAT/BPSS (generic)	1 per 2 lanes +1 for odd numbered lanes +1 if checkpoint feeds international flights	• Non-dedicated • 20A, 125V, 180VA/podium • 2-Pole, 3-Wire Grounding • NEMA 5-20R Duplex Receptacle • Power cord length is unknown at the time of this printing	• Data Drops = 2 • Cat5e / Cat6 cable • The cable length from the termination point in the IT cabinet to the data outlet in the work area shall not exceed 295′. • If data drop cannot be secured when the checkpoint is closed, a locking device is required. Coordinate with TSA HQ IT Security.	• The TDC function can be supported by either a TDC Podium or a CAT/BPSS. • The CAT/BPSS may be on wheels or it may sit on floor.



SIDE VIEW: PODIUM

ELEVATION

PLAN VIEW: PODIUM OR CAT/BPSS

SIDE VIEW: CAT/BPSS *(GENERIC)*

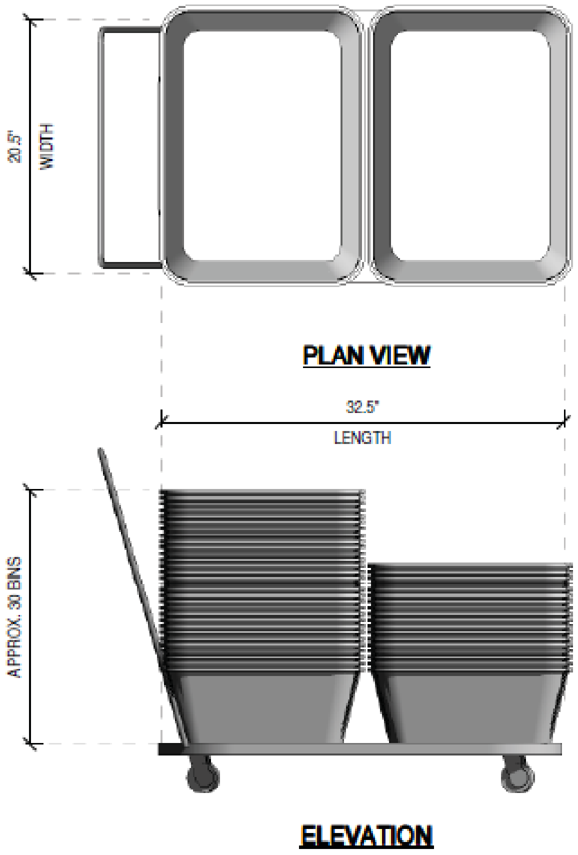
ELEVATION

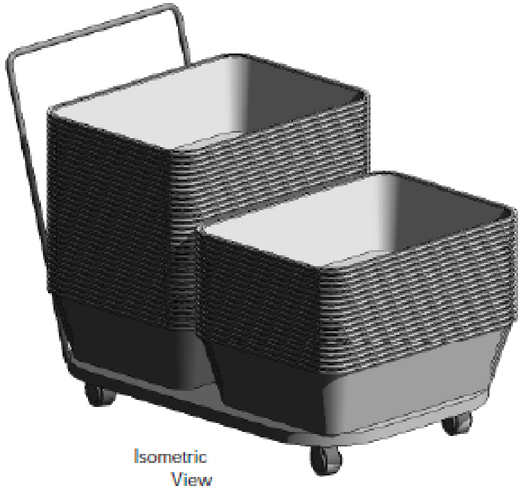
2.3 BIN CART

Bins are the gray containers located on a cart at the front and back of each checkpoint lane. Passengers use bins to divest themselves of their personal belongings such as purses, carry-on bags, backpacks, laptops, shoes, jackets, etc. Bin carts are similar to a hand cart or dolly that allows for the transport of a large number of bins without requiring excessive lifting or carrying by a TSA agent. In the past, bin transport by the TSOs was the primary cause of on-the-job injuries at checkpoints. Hand-carrying of bins is no longer endorsed by TSA. TSA recommends that bin carts be pushed upstream though an ADA or access gate. Ideally, an ADA or access gate should exist at every lane but this is not always possible. When there is insufficient space for an ADA or access gate, the bin cart should be pushed upstream against passenger flow through the WTMD.

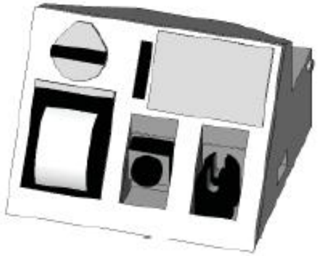
Bin carts can be one or two bins wide with bins stacked on top to slightly below the handle which equates to approximately 40 bins. Each lane requires a bin cart at each end. TSA recommends maintaining about 60 bins per lane divided across each end. A fully-loaded bin cart should be located at the start of the divest tables on the non-sterile side of the lane for passenger pick-up. The other bin cart should be positioned at the end of the composure rollers on the sterile side so that the TSA agent can collect empty bins after passengers have picked up their belongings. Refer to **Figure 2-9** for bin cart dimensions. The bin cart width times two should be factored into the overall length of the checkpoint lane when designing a new checkpoint or reconfiguring an existing checkpoint.

Figure 2-9 Bin Cart





ETD



GE IonTrack Itemiser
Isometric View

GE IonTrack Itemiser^3
Isometric View

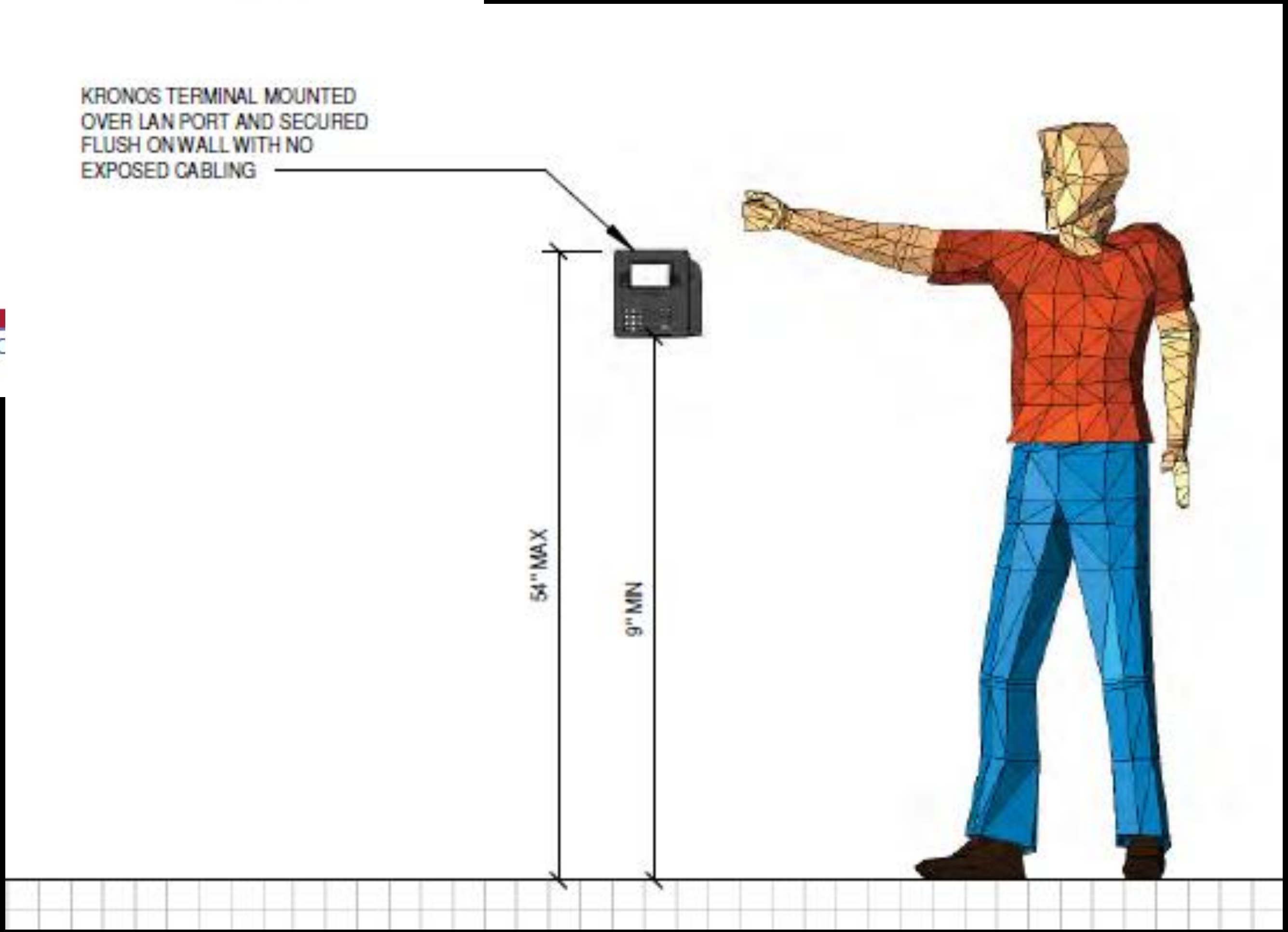
Smiths IonScan 400B
Isometric View

Smiths IonScan 500DT
Isometric View

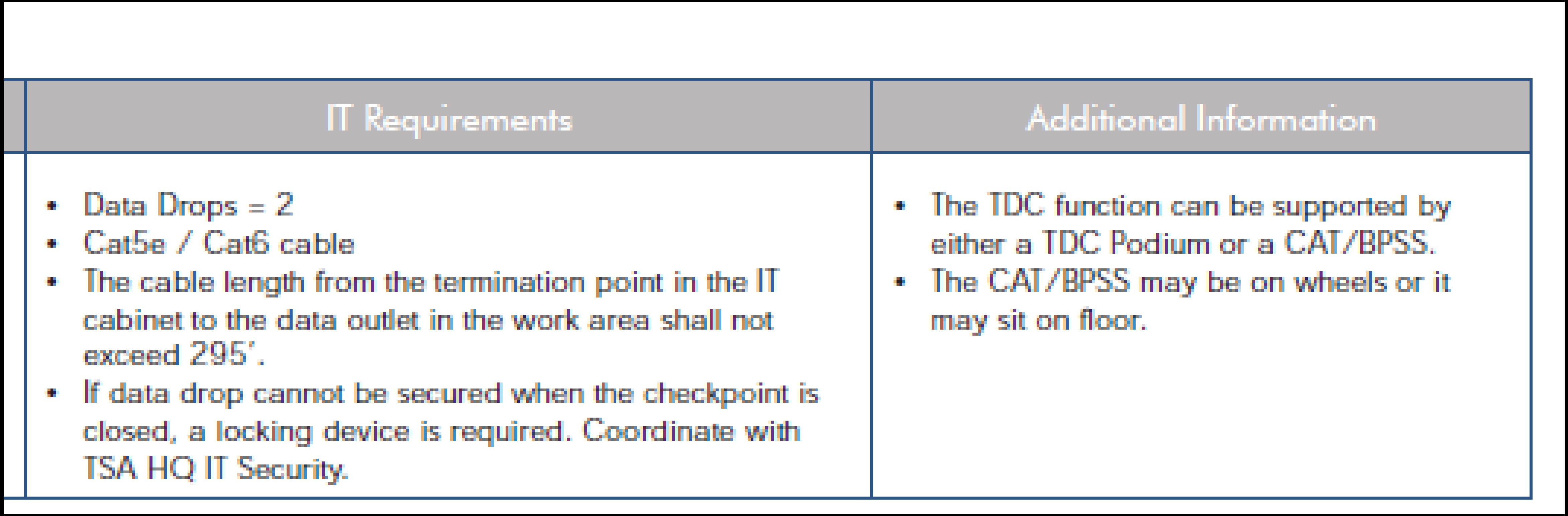
BLS

CEIA EMA-MS
Isometric View

Smiths ResponderR RCI
Isometric View

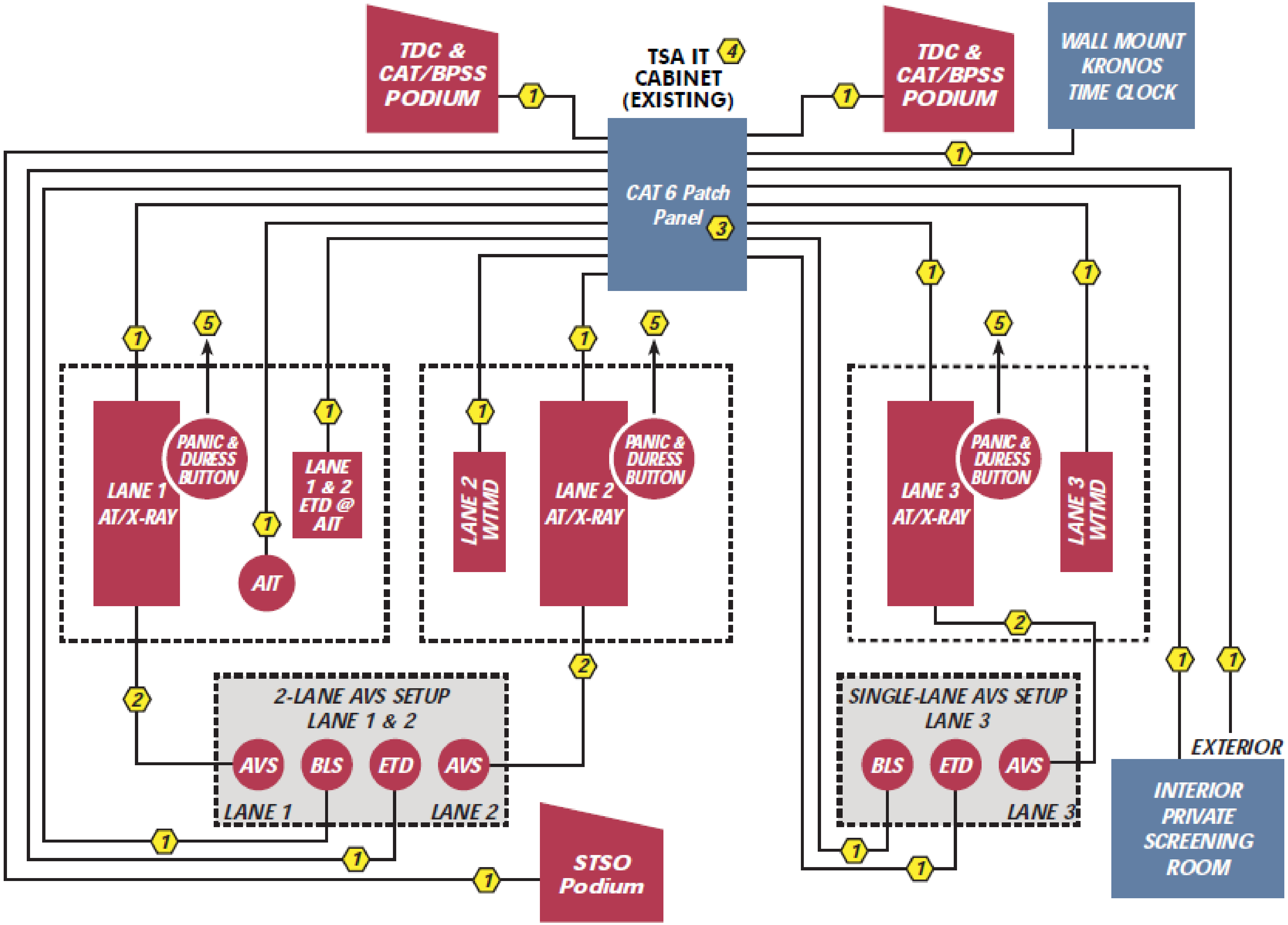


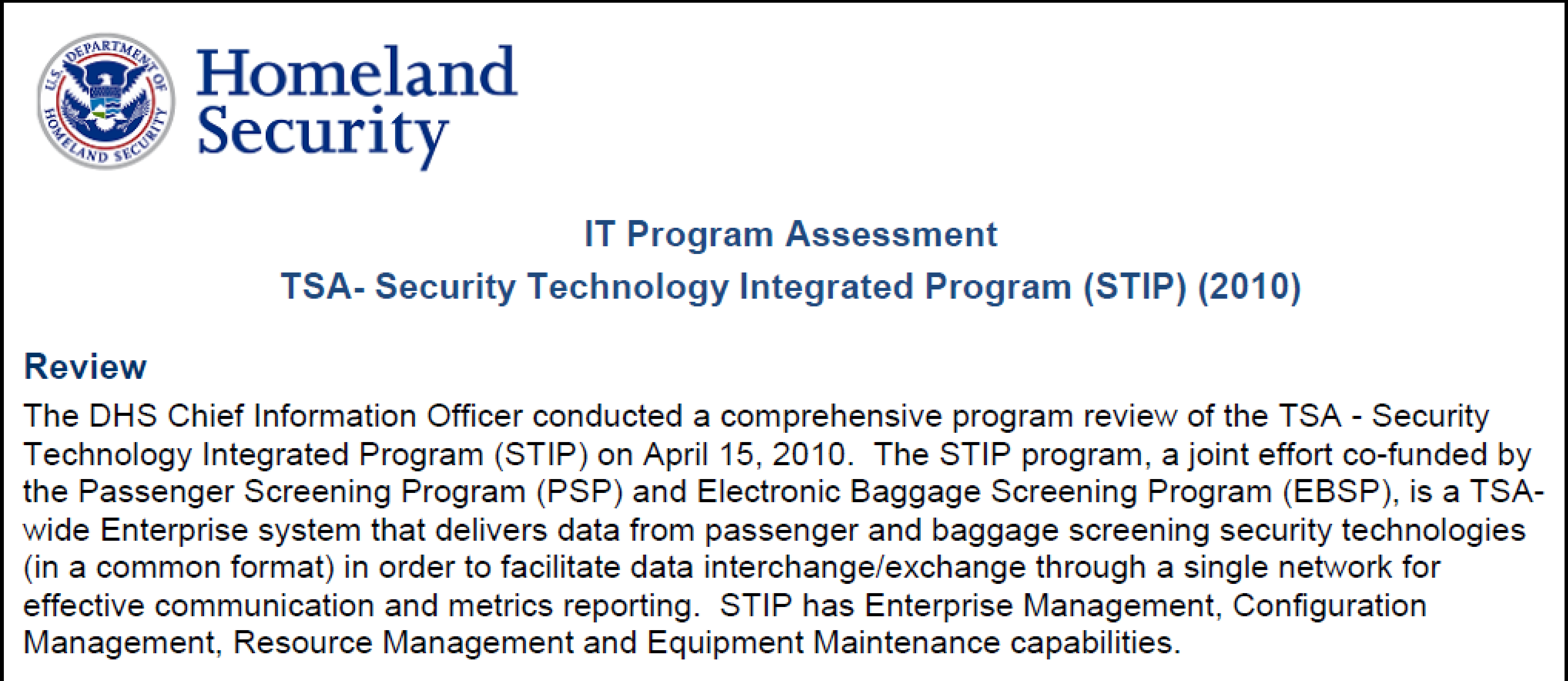
KRONOS TERMINAL MOUNTED
OVER LAN PORT AND SECURED
FLUSH ON WALL WITH NO
EXPOSED CABLING



IT Requirements	Additional Information
• Data Drops = 2 • Cat5e / Cat6 cable • The cable length from the termination point in the IT cabinet to the data outlet in the work area shall not exceed 295'. • If data drop cannot be secured when the checkpoint is closed, a locking device is required. Coordinate with TSA HQ IT Security.	• The TDC function can be supported by either a TDC Podium or a CAT/BPSS. • The CAT/BPSS may be on wheels or it may sit on floor.

Figure 4-1 SSCP Data Connectivity Diagram





Homeland Security

IT Program Assessment

TSA- Security Technology Integrated Program (STIP) (2010)

Review

The DHS Chief Information Officer conducted a comprehensive program review of the TSA - Security Technology Integrated Program (STIP) on April 15, 2010. The STIP program, a joint effort co-funded by the Passenger Screening Program (PSP) and Electronic Baggage Screening Program (EBSP), is a TSA-wide Enterprise system that delivers data from passenger and baggage screening security technologies (in a common format) in order to facilitate data interchange/exchange through a single network for effective communication and metrics reporting. STIP has Enterprise Management, Configuration Management, Resource Management and Equipment Maintenance capabilities.

TSANET

Category X Airports

A Quick Lesson on Backdoors

I can't believe it, Jim. That girl's standing over there listening and you're telling him about our back doors?

[*Yelling*] Mr. Potato Head! Mr. Potato head! Backdoors are not secrets!

Yeah, but your giving away our best tricks!

They’re not tricks!

A Word About Backdoors

- Malicious account added by a third party
- Debugging accounts that someone forget to remove
- Accounts used by Technicians for Service and Maintenance

Technician Accounts == Backdoors

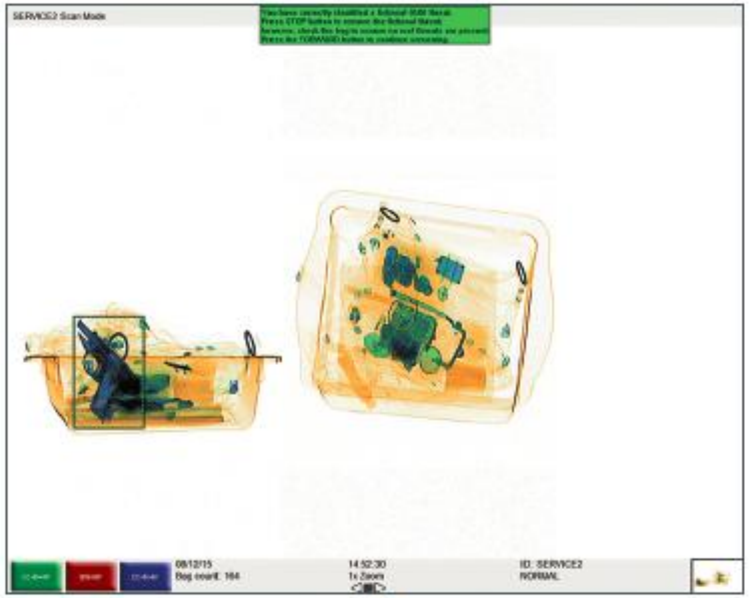
- Often hardcoded into the software
- Applications which depend on the passwords
- Business process which depend on passwords
- External software which depend on passwords
- Training which train technicians to use these passwords

Technician Accounts == Backdoors

- Can be discovered by external third parties (like me!)
- Cannot be changed by the end user (in most cases)
- Once initial work is completed, these passwords usually scale

Rapiscan 522B

—RAPISCAN THREAT IMAGE PROJECTION—



SERVICE2 Scan Mode

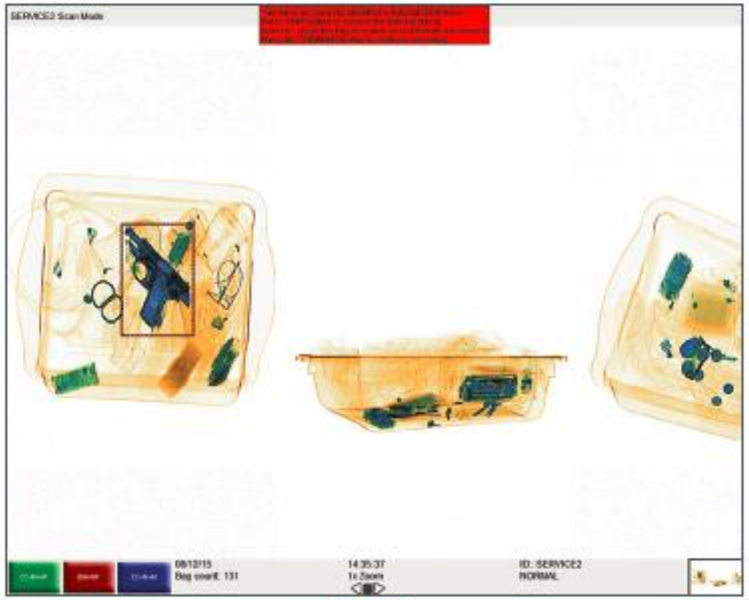
You have correctly classified a [illegible] threat.
Press STOP button to remove the [illegible] threat.
however, check the bag to ensure no real threats are present.
Press the FORWARD button to continue screening.

08/12/15
Bag count: 164

14:52:30
1x Zoom

ID: SERVICE2
NORMAL

HIT



SERVICE2 Scan Mode

[illegible]

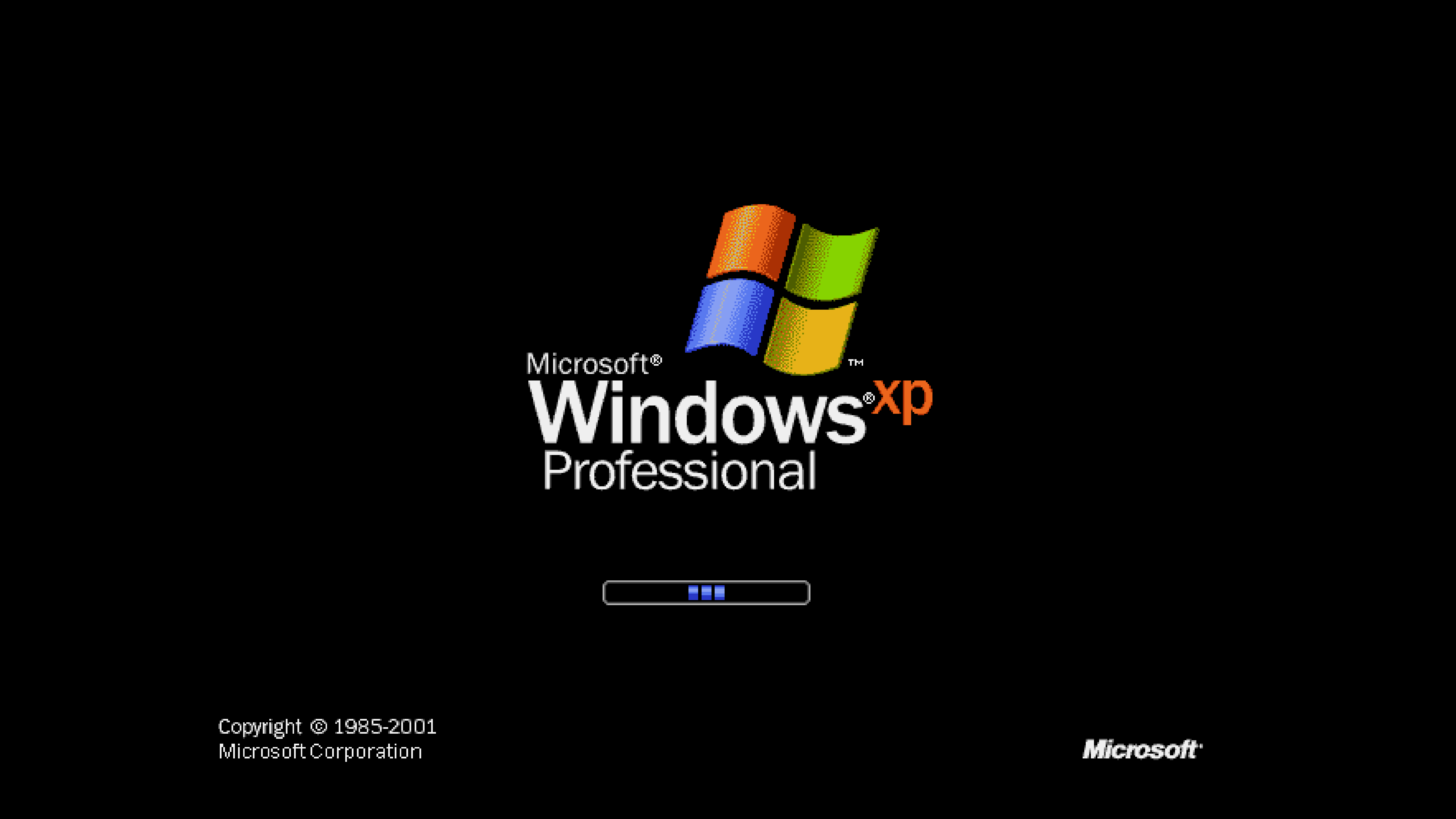
08/12/15
Bag count: 131

14:35:37
1x Zoom

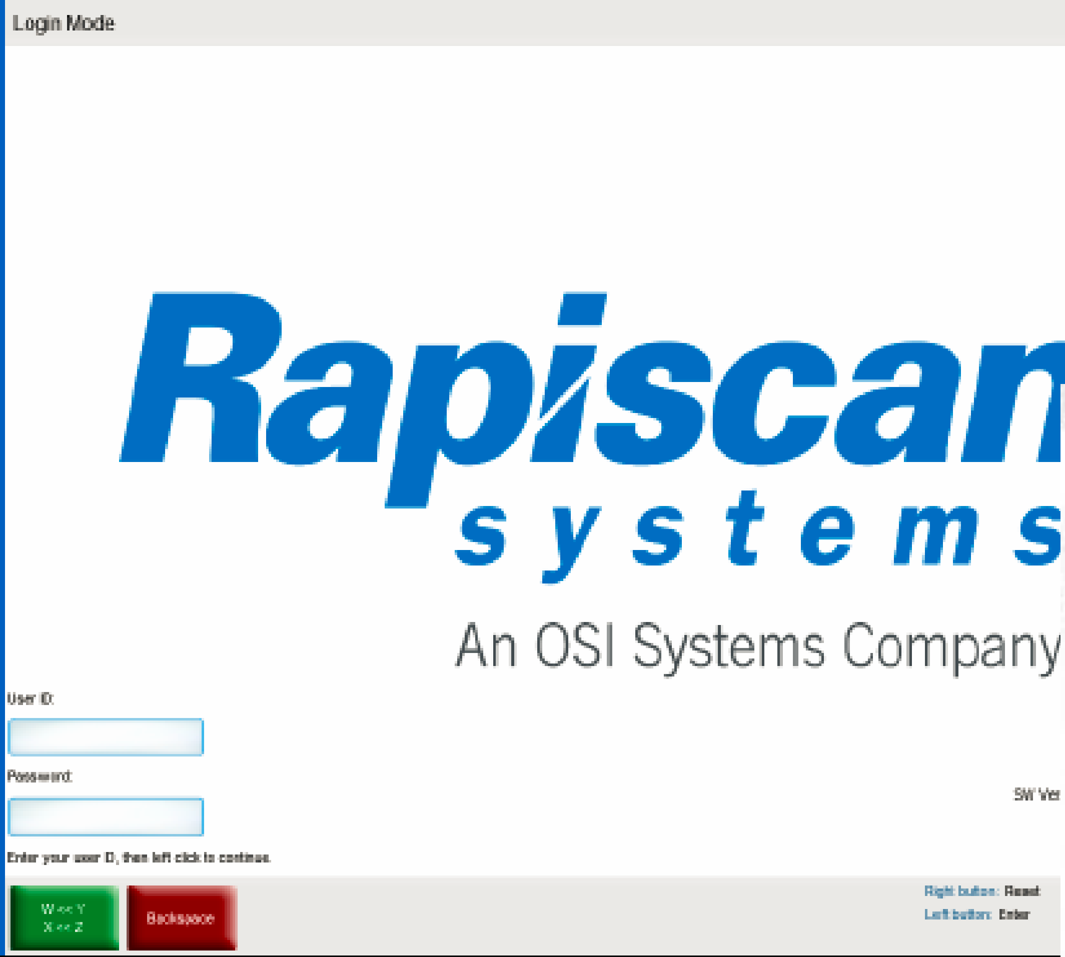
ID: SERVICE2
NORMAL

MISS

Microsoft
Windows98



Copyright © 1985-2001
Microsoft Corporation



Login Mode

Rapiscan® systems

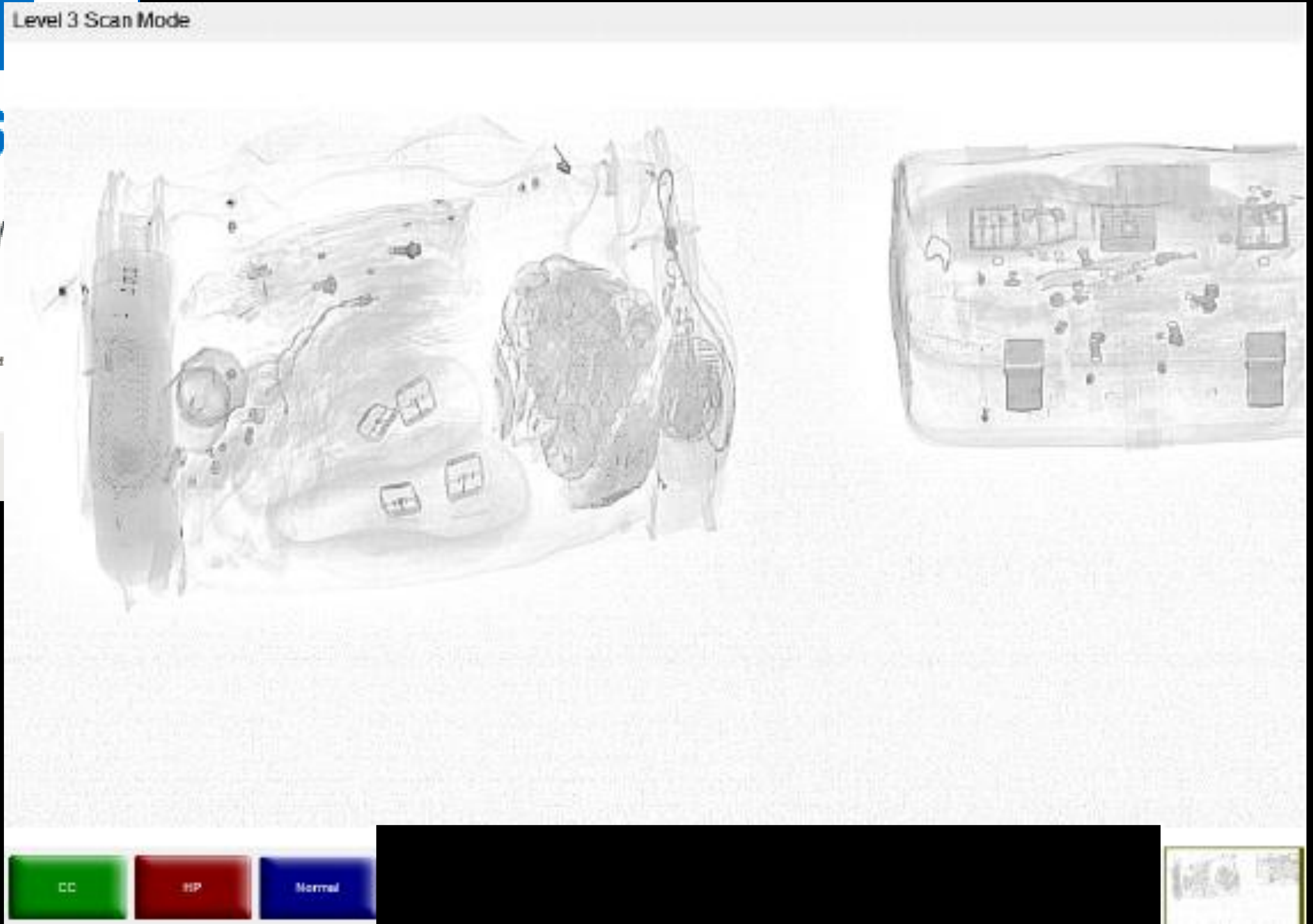
An OSI Systems Company

User ID:

Password:

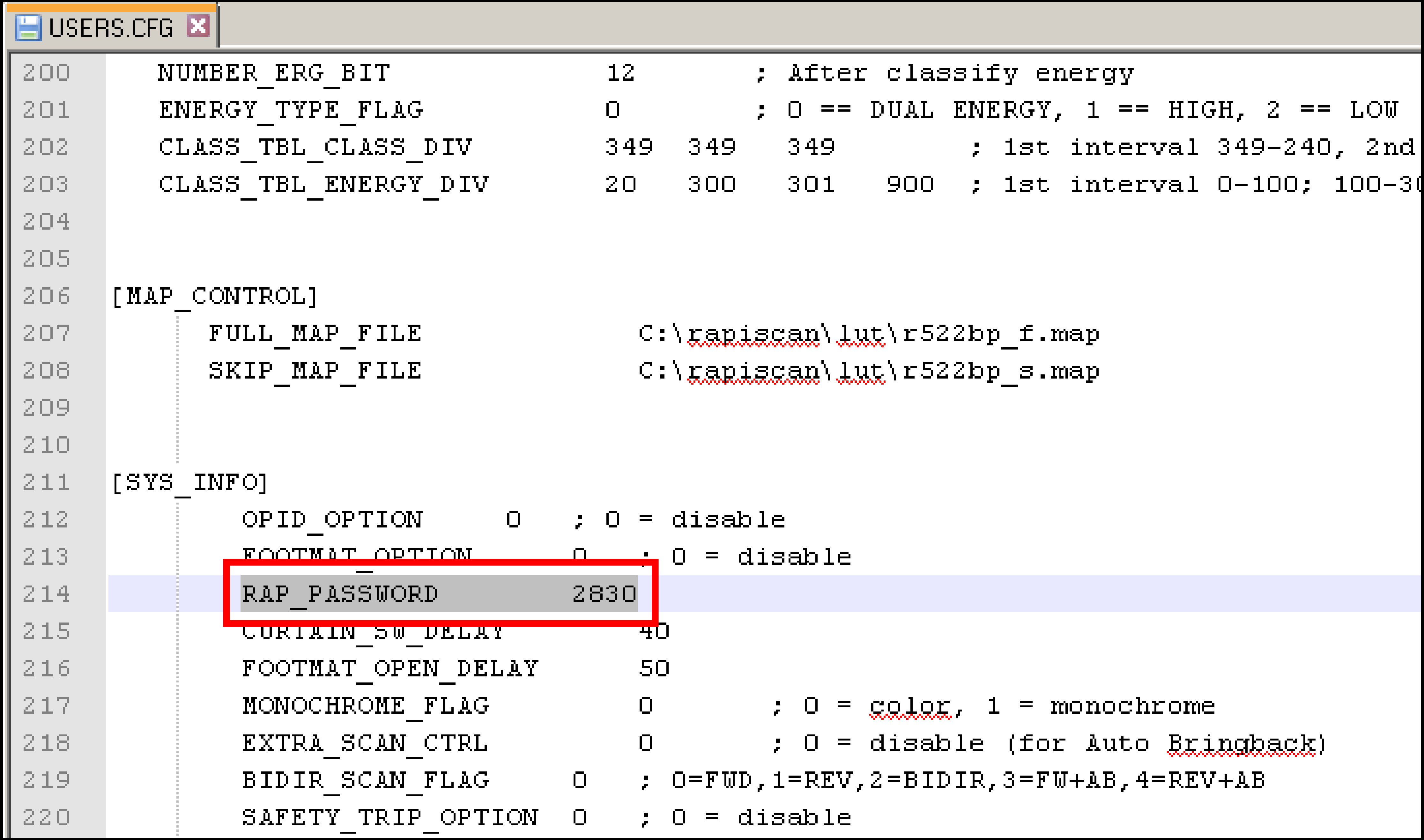
SW Ver

Enter your user ID, then left click to continue.

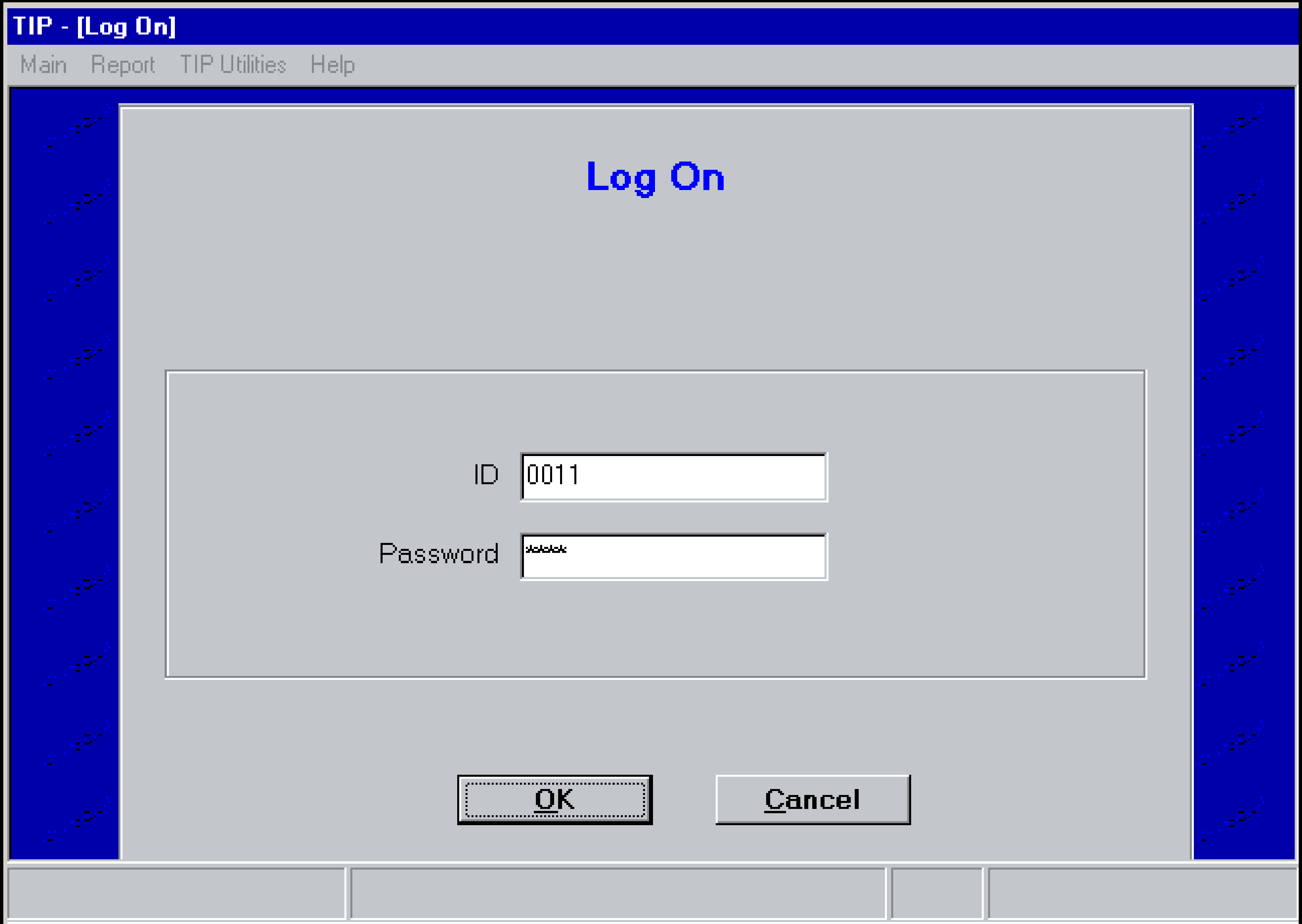


Level 3 Scan Mode

[redacted]



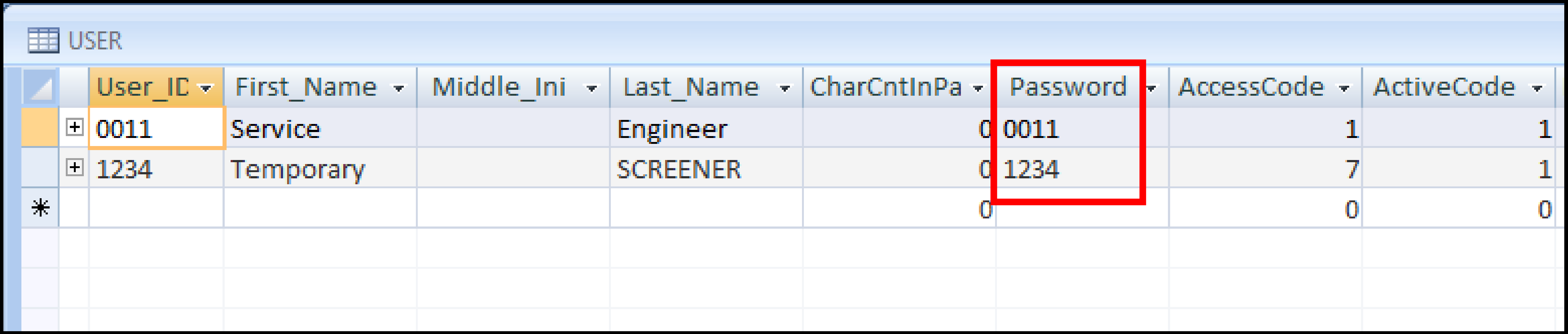
```
   NUMBER_ERG_BIT             12         ; After classify energy
   ENERGY_TYPE_FLAG           0          ; 0 == DUAL ENERGY, 1 == HIGH, 2 == LOW
   CLASS_TBL_CLASS_DIV        349   349    349          ; 1st interval 349-240, 2nd
   CLASS_TBL_ENERGY_DIV       20    300    301    900   ; 1st interval 0-100; 100-30


[MAP_CONTROL]
      FULL_MAP_FILE                      C:\rapiscan\lut\r522bp_f.map
      SKIP_MAP_FILE                      C:\rapiscan\lut\r522bp_s.map


[SYS_INFO]
        OPID_OPTION      0    ; 0 = disable
        FOOTMAT_OPTION       0    ; 0 = disable
        RAP_PASSWORD         2830
        CURTAIN_SW_DELAY          40
        FOOTMAT_OPEN_DELAY        50
        MONOCHROME_FLAG           0          ; 0 = color, 1 = monochrome
        EXTRA_SCAN_CTRL           0          ; 0 = disable (for Auto Bringback)
        BIDIR_SCAN_FLAG      0    ; 0=FWD,1=REV,2=BIDIR,3=FW+AB,4=REV+AB
        SAFETY_TRIP_OPTION   0    ; 0 = disable
```



Log On

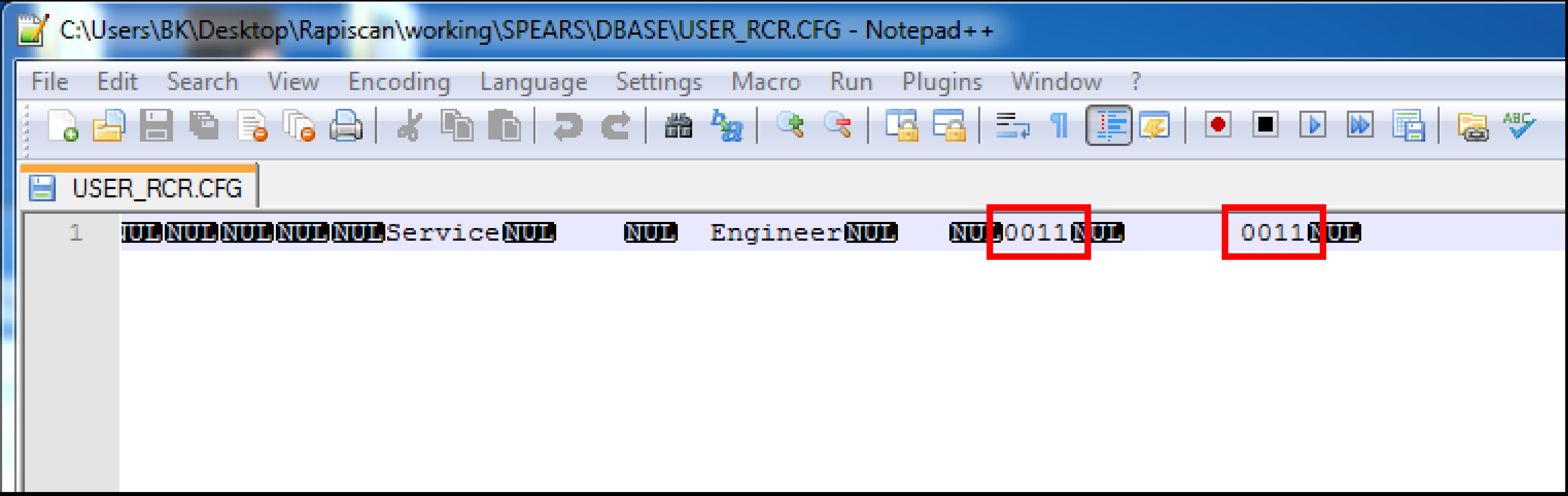
ID 0011

Password ****



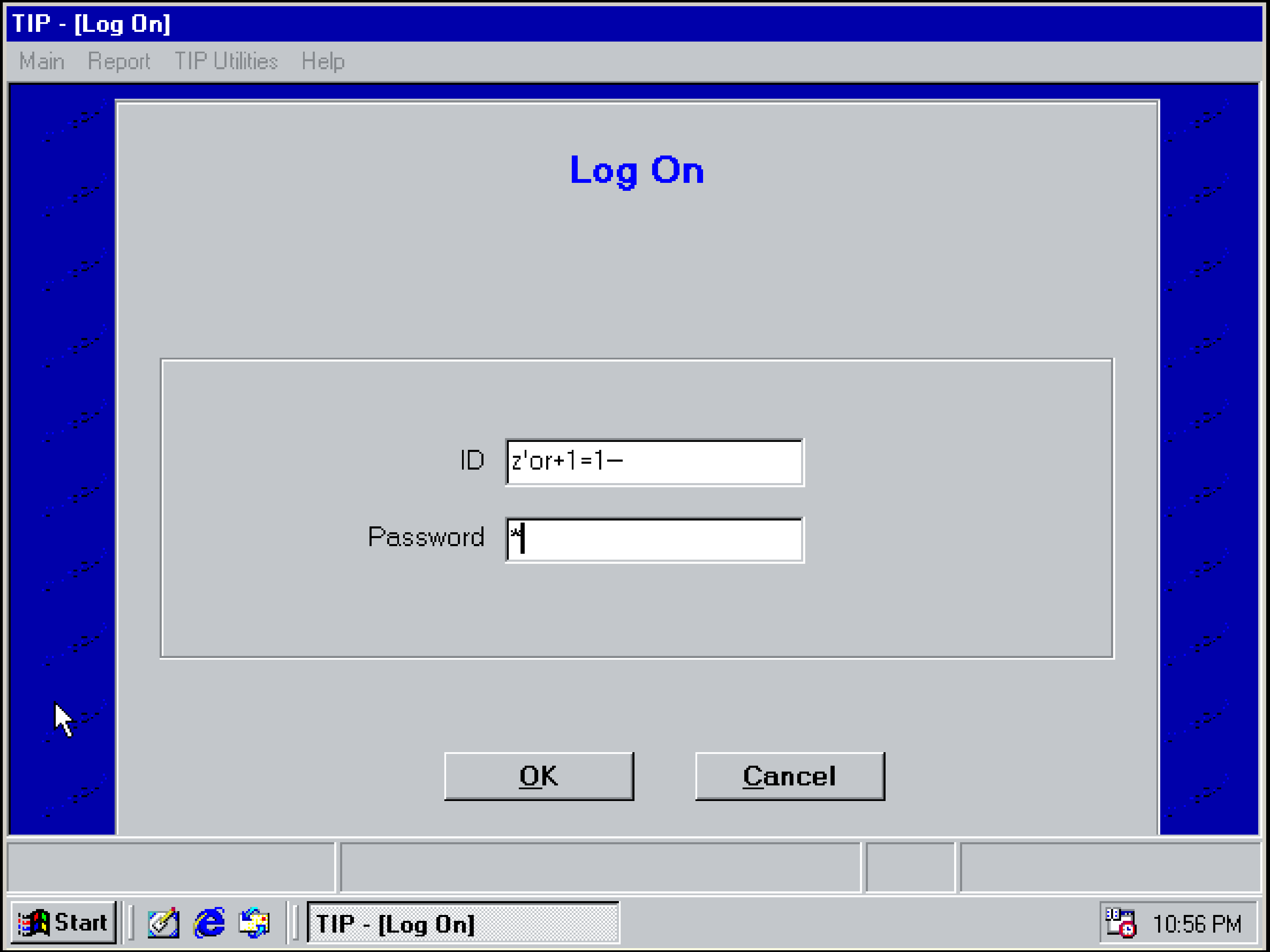
USER

	User_ID	First_Name	Middle_Ini	Last_Name	CharCntInPa	Password	AccessCode	ActiveCode
⊞	0011	Service		Engineer	0	0011	1	1
⊞	1234	Temporary		SCREENER	0	1234	7	1
*					0		0	0



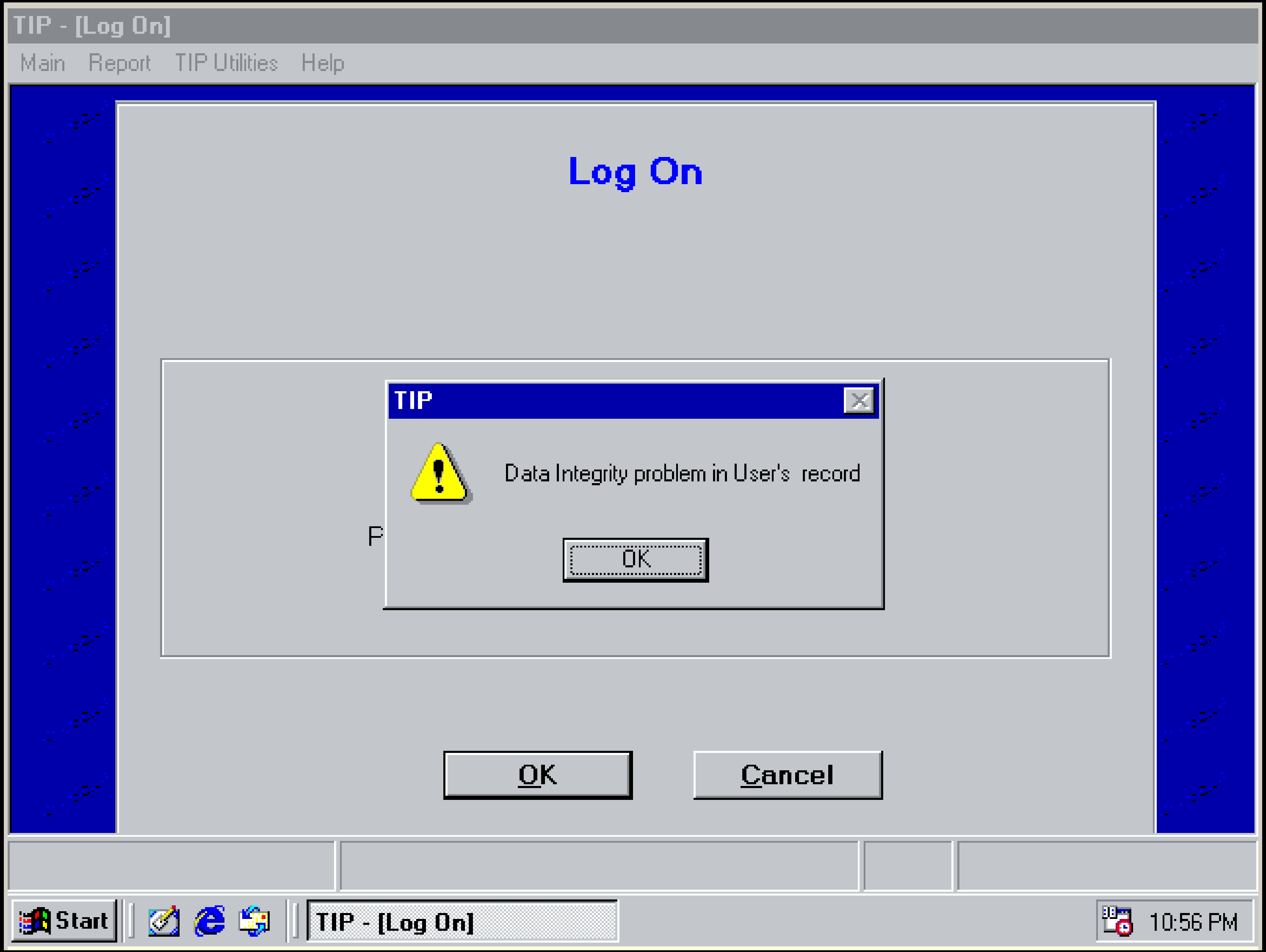
C:\Users\BK\Desktop\Rapiscan\working\SPEARS\DBASE\USER_RCR.CFG - Notepad++

```
NULNULNULNULNULServiceNUL     NUL   EngineerNUL     NUL0011NUL         0011NUL
```

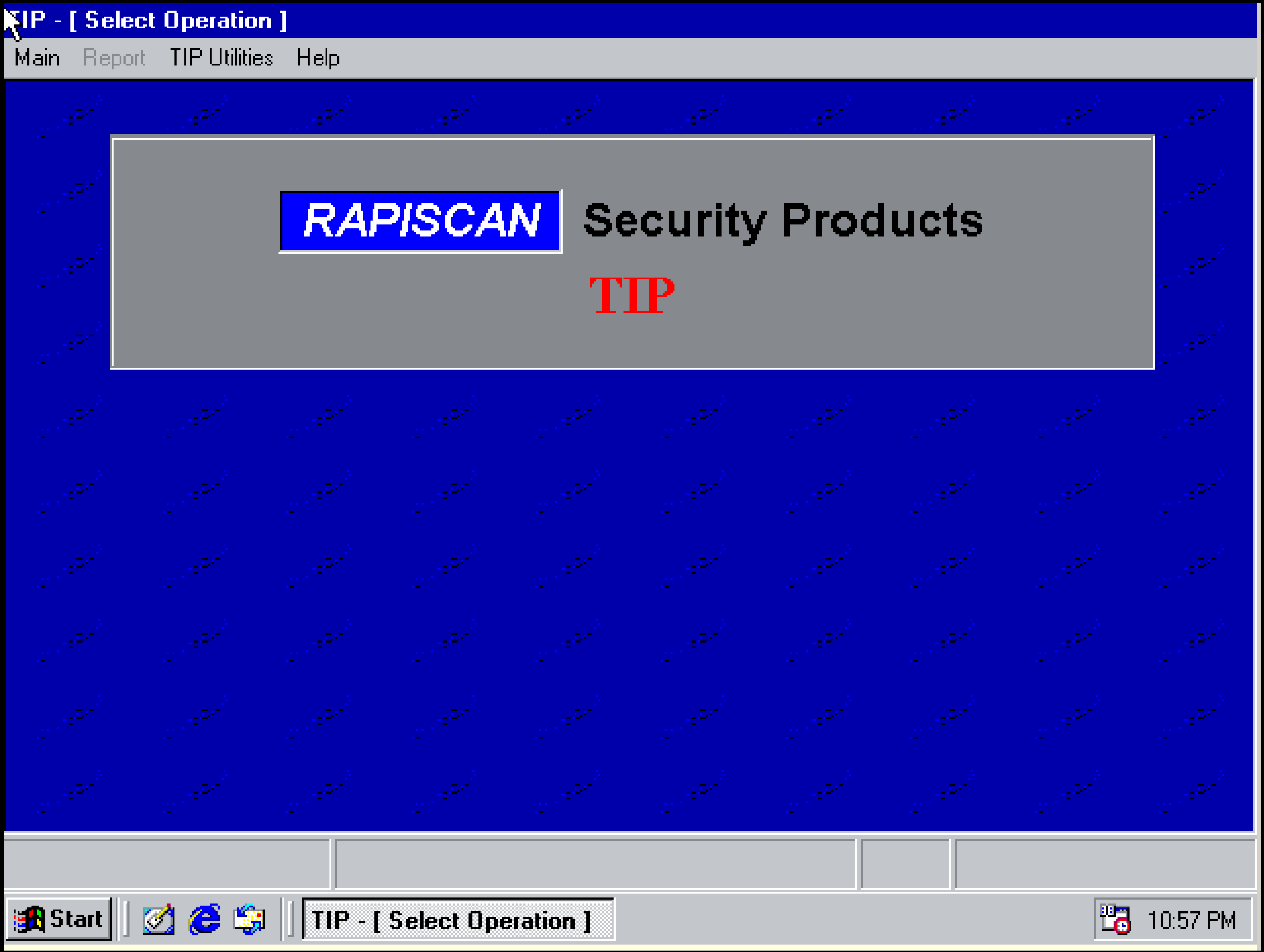


ID z'or+1=1--

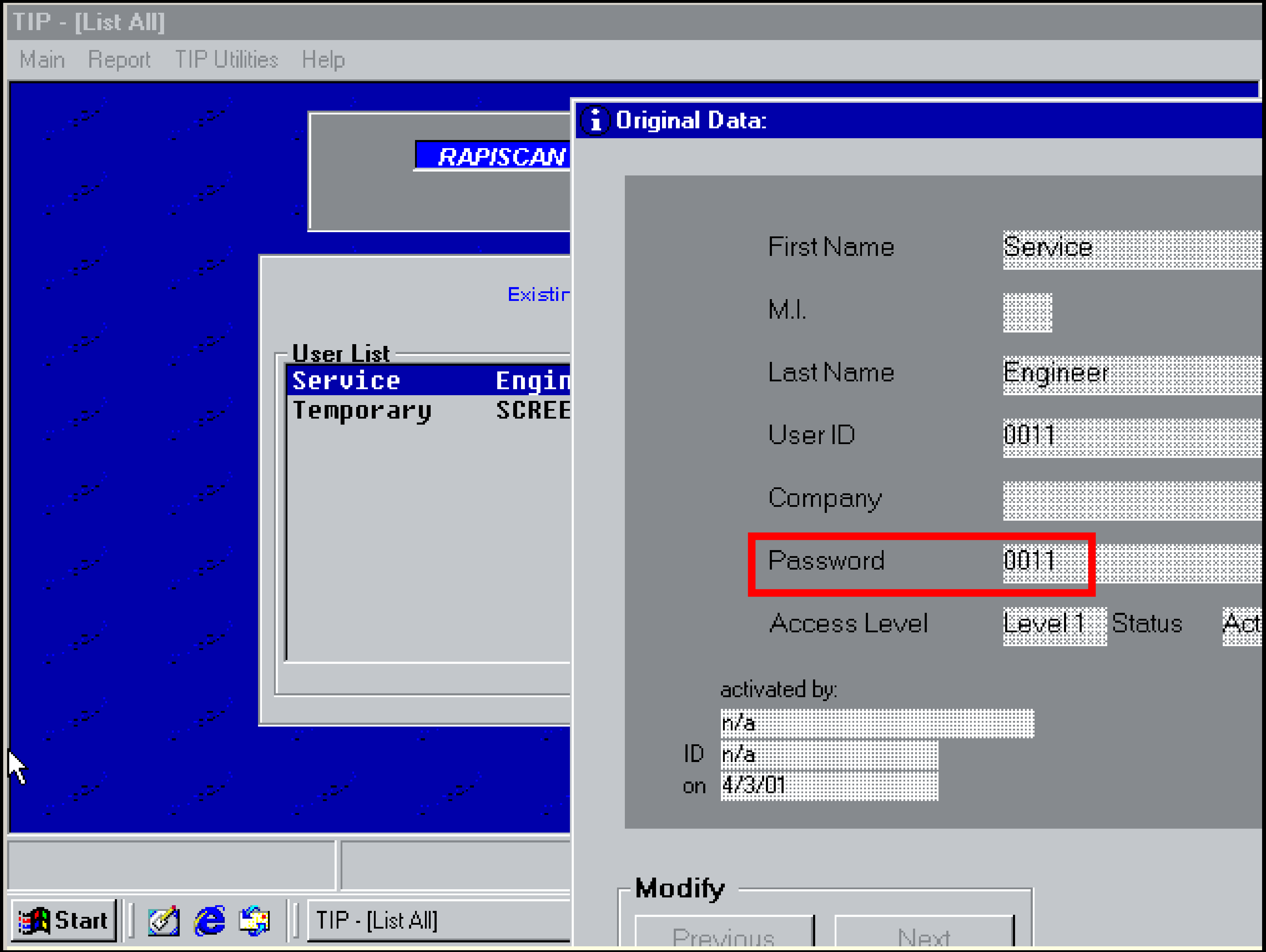
Password *



Data Integrity problem in User's record


TIP - [Select Operation]
Main
Report
TIP Utilities
Help
RAPISCAN
Security Products
TIP
Start
TIP - [Select Operation]
10:57 PM

```
try {
        if (Checkpassword()){
                Authenticate();
        }
        Else{
                AuthFail();
        }
}
catch{
        ShowErrorMessage();
        Authenticate();
}
```



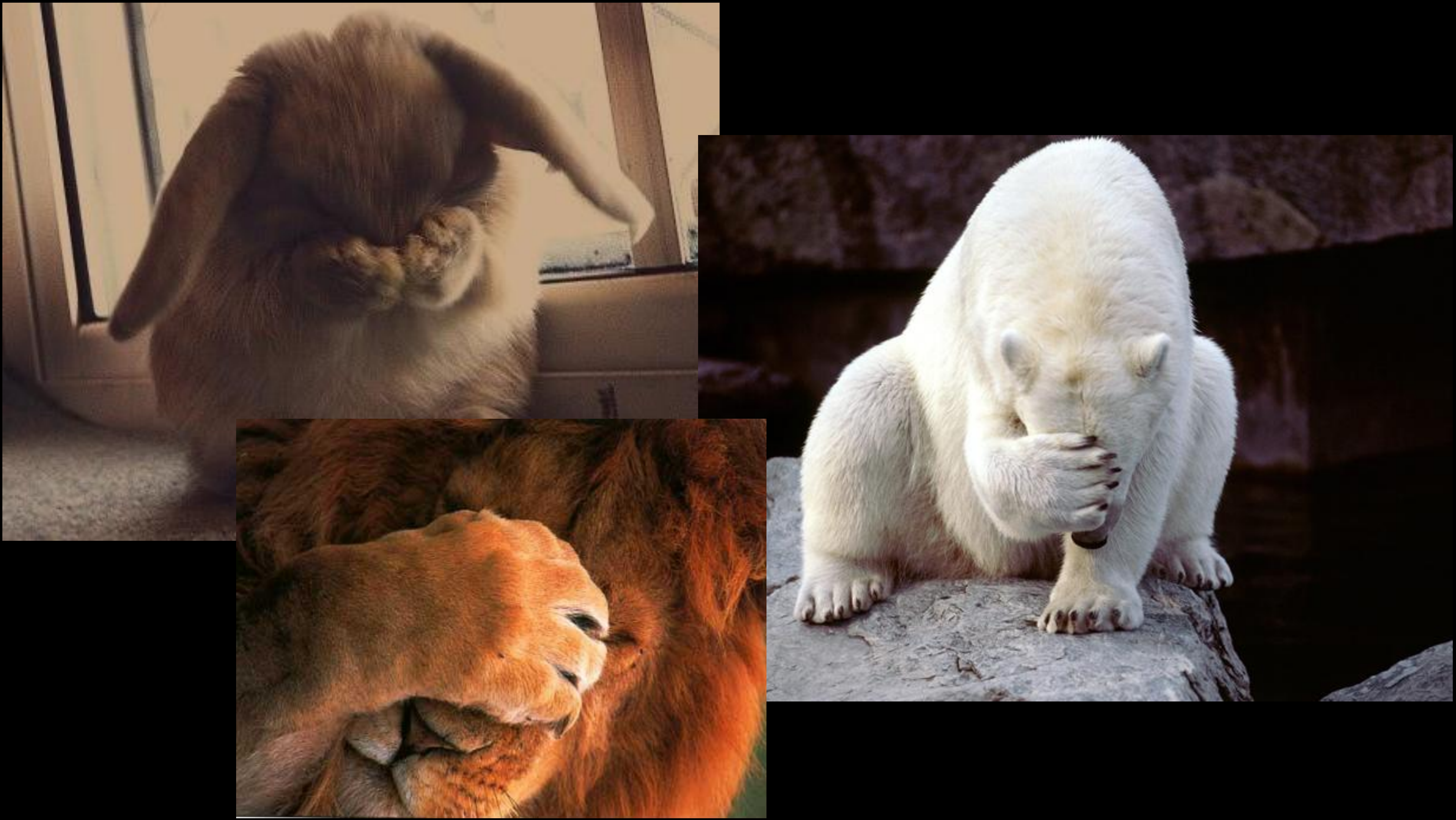
Original Data:

User List

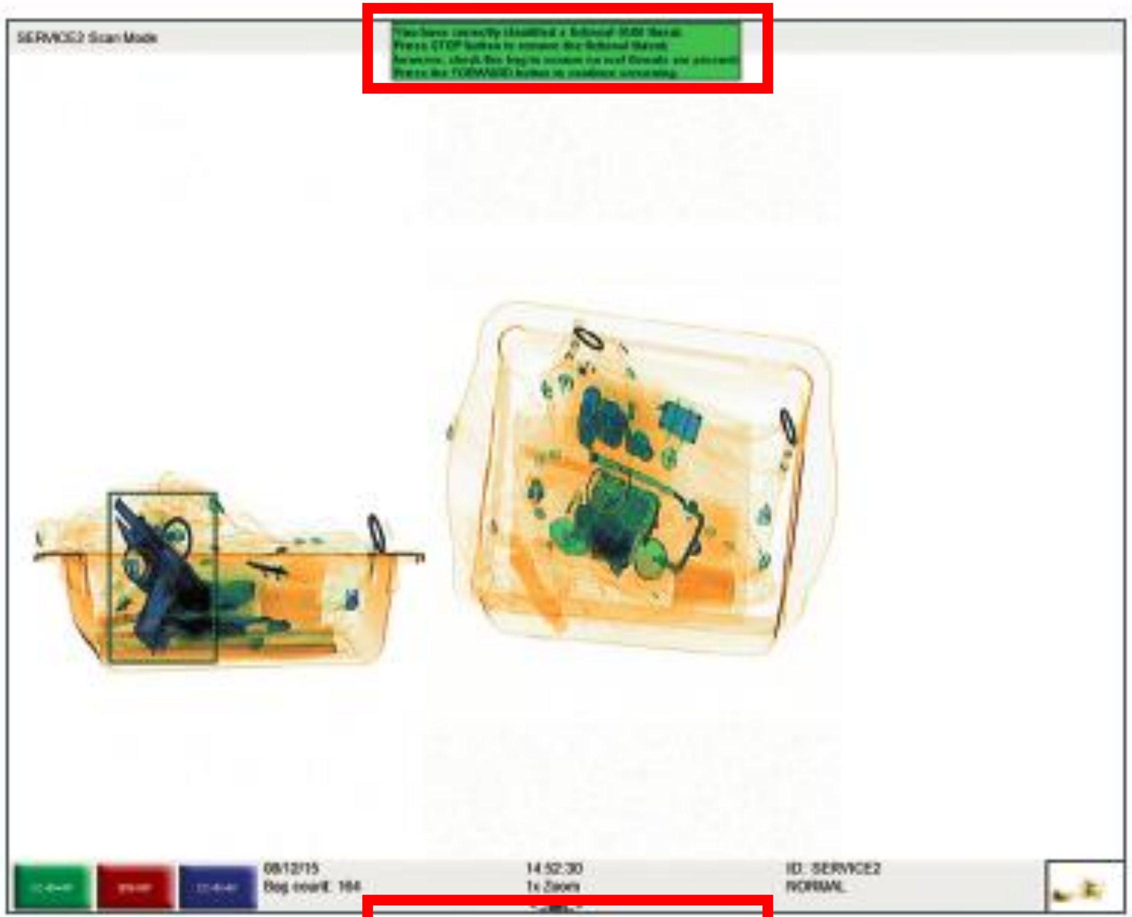
Service	Engin
Temporary	SCREE

First Name	Service
M.I.	
Last Name	Engineer
User ID	0011
Company	
Password	0011
Access Level	Level 1
Status	Act

activated by: n/a
ID n/a
on 4/3/01



RAPISCAN THREAT IMAGE PROJECTION



SERVICE2 Scan Mode

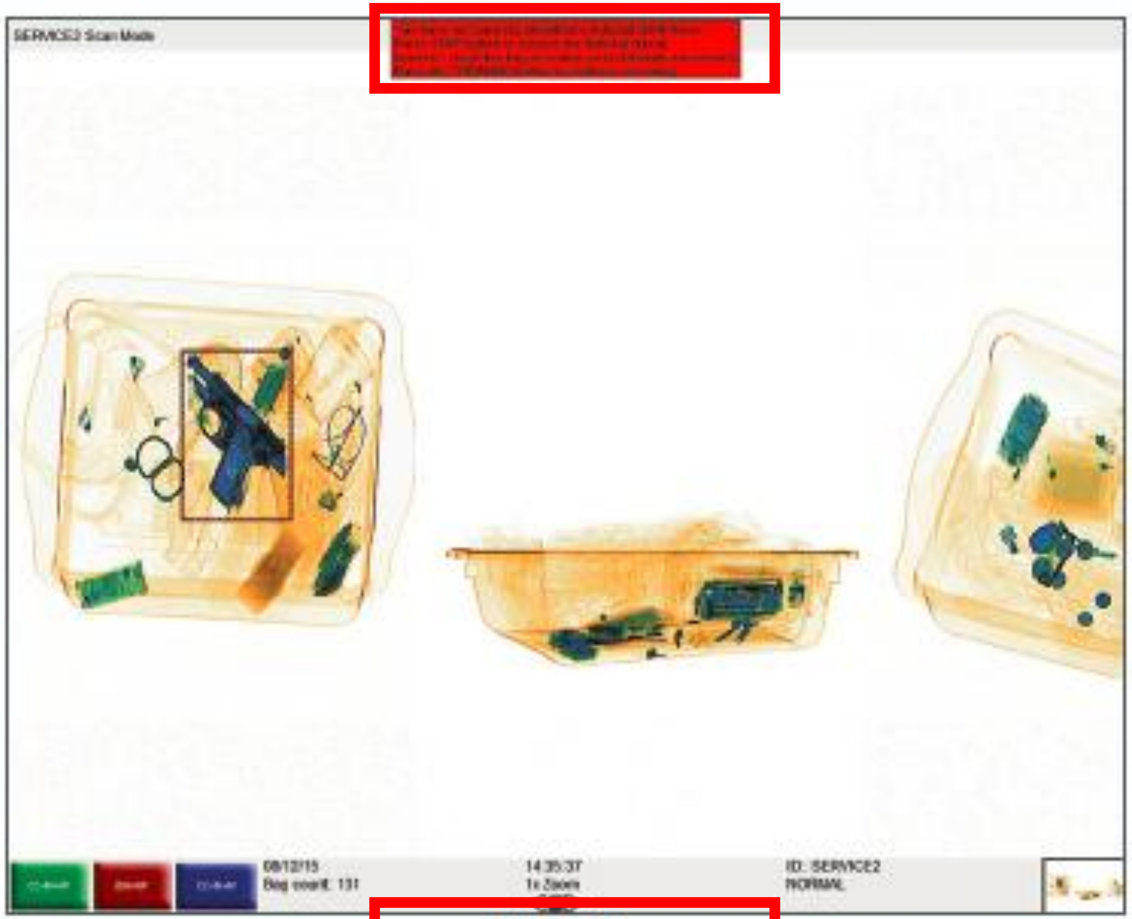
You have correctly classified a fictional [illegible] threat.
Press STOP button to remove the fictional threat.
however, check the bag to ensure no real threats are present.
Press the FORWARD button to continue screening.

08/12/15
Bag count: 164

14:52:30
1x Zoom

ID: SERVICE2
NORMAL

HIT



SERVICE2 Scan Mode

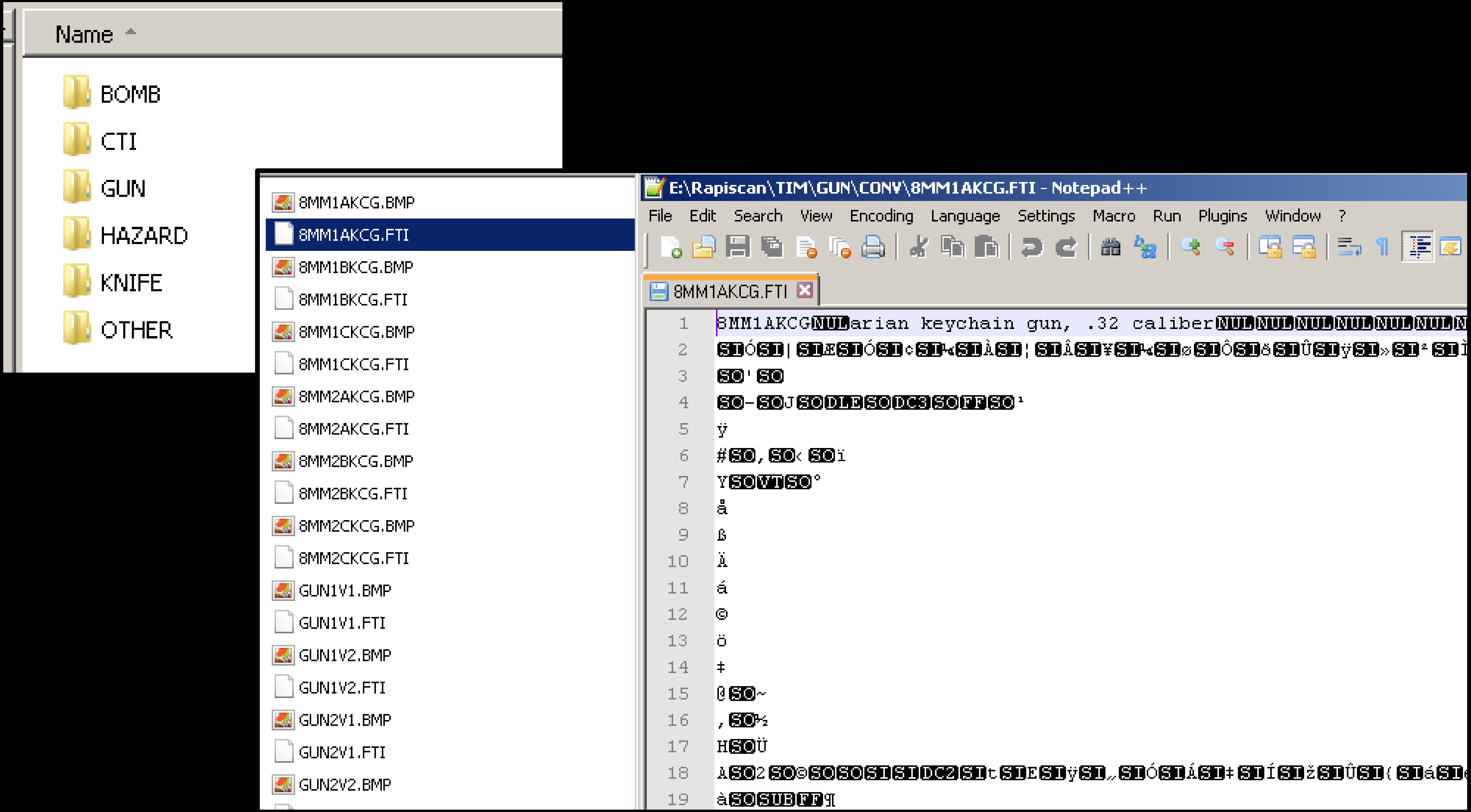
[illegible]

08/12/15
Bag count: 131

14:35:37
1x Zoom

ID: SERVICE2
NORMAL

MISS



BOMB
CTI
GUN
HAZARD
KNIFE
OTHER

8MM1AKCG.BMP
8MM1AKCG.FTI
8MM1BKCG.BMP
8MM1BKCG.FTI
8MM1CKCG.BMP
8MM1CKCG.FTI
8MM2AKCG.BMP
8MM2AKCG.FTI
8MM2BKCG.BMP
8MM2BKCG.FTI
8MM2CKCG.BMP
8MM2CKCG.FTI
GUN1V1.BMP
GUN1V1.FTI
GUN1V2.BMP
GUN1V2.FTI
GUN2V1.BMP
GUN2V1.FTI
GUN2V2.BMP

E:\Rapiscan\TIM\GUN\CONV\8MM1AKCG.FTI - Notepad++

```
8MM1AKCGNULarian keychain gun, .32 caliberNULNULNULNULNULNULN
SIÓSI|SIÆSIÓSI¢SI¬SIÀSI¦SIÅSI¥SI¬SIøSIÔSIðSIÛSIÿSI»SI²SIÌ
SO'SO
SO-SOJSODLESODC3SOFFSO¹
ÿ
#SO,SO‹SOï
YSOVTSO°
å
ß
Ä
á
©
ö
‡
@SO~
,SO½
HSOÜ
ASO2SO©SOSOSISIDC2SItSIESIÿSI„SIÓSIÁSI‡SIÍSIžSIÛSI{SIáSI
àSOSUBFF¶
```

“TSA has strict requirements that all vendors must meet for security effectiveness and efficiency and does not tolerate any violation of contract obligations. TSA is responsible for the safety and security of the nearly two million travelers screened each day.”

http://www.bloomberg.com/news/2013-12-06/naked-scanner-maker-osi-systems-falls-on-losing-tsa-order.html

"Questions remain about how the situation will be rectified and the potential for unmitigated threats posed by the failure to remove the machinery," the committee's Republican and Democratic leaders wrote in a Dec. 6 letter to the men. "It is our understanding that these new components -- inappropriately labeled with the same part number as the originally approved component -- were entirely manufactured and assembled in the People's Republic of China."

http://www.nextgov.com/defense/2013/12/congress-grills-tsa-chinese-made-luggage-scanner-parts/75098/

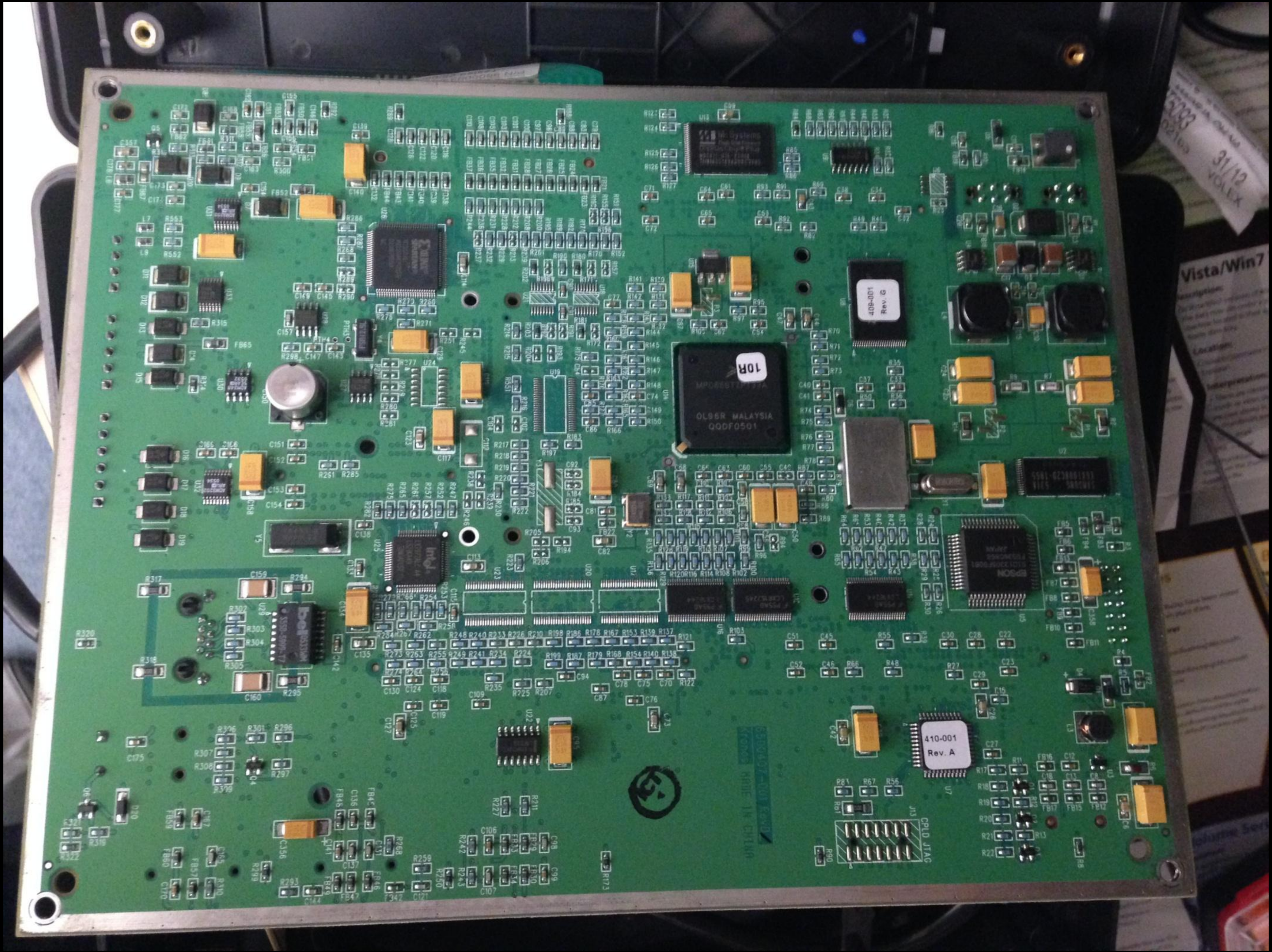
“The referenced component is the X-ray generator, a simple electrical item with no moving parts or software.”

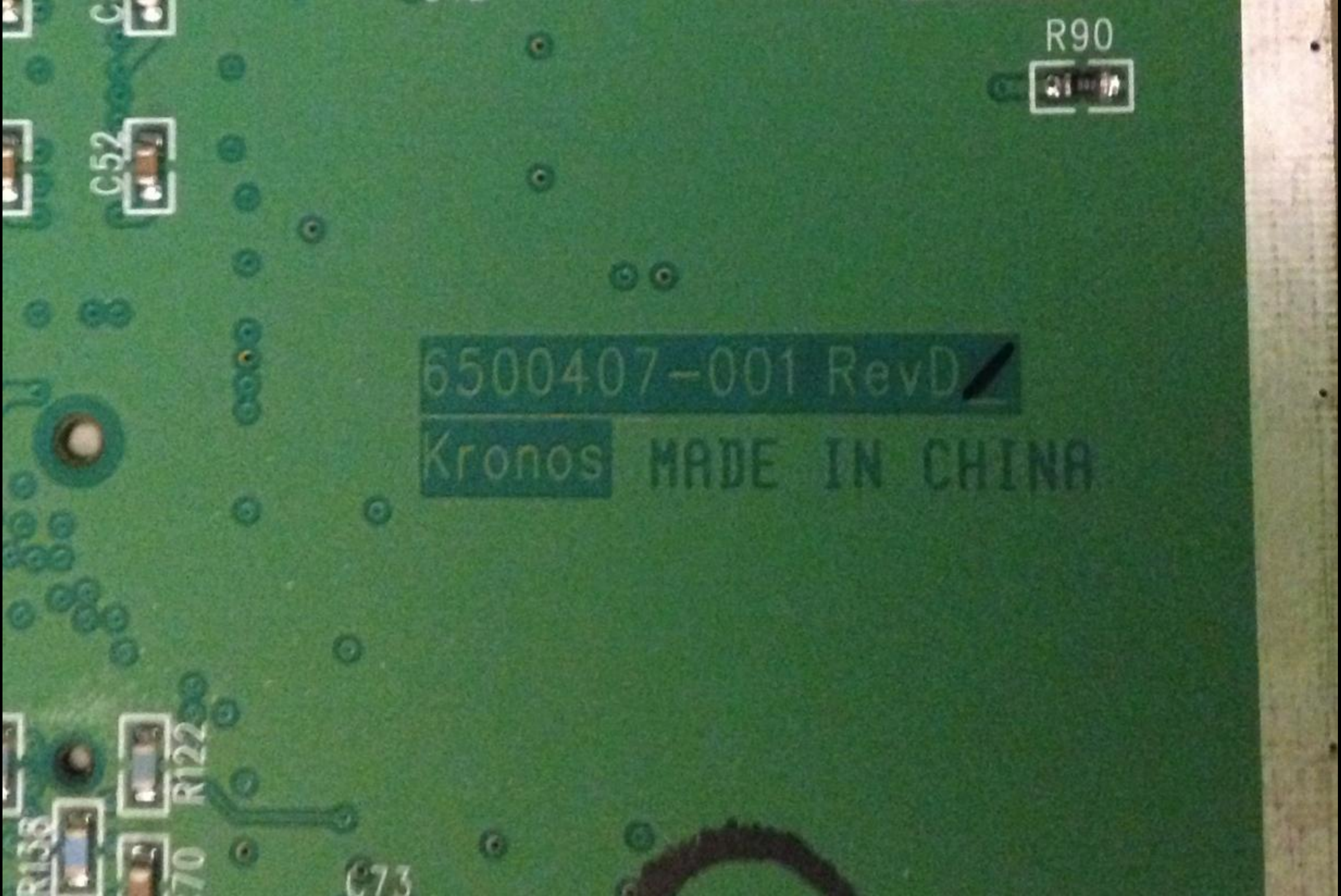
He described the piece as "effectively, an X-ray light bulb."

http://www.nextgov.com/defense/2013/12/congress-grills-tsa-chinese-made-luggage-scanner-parts/75098/

Shutterstock

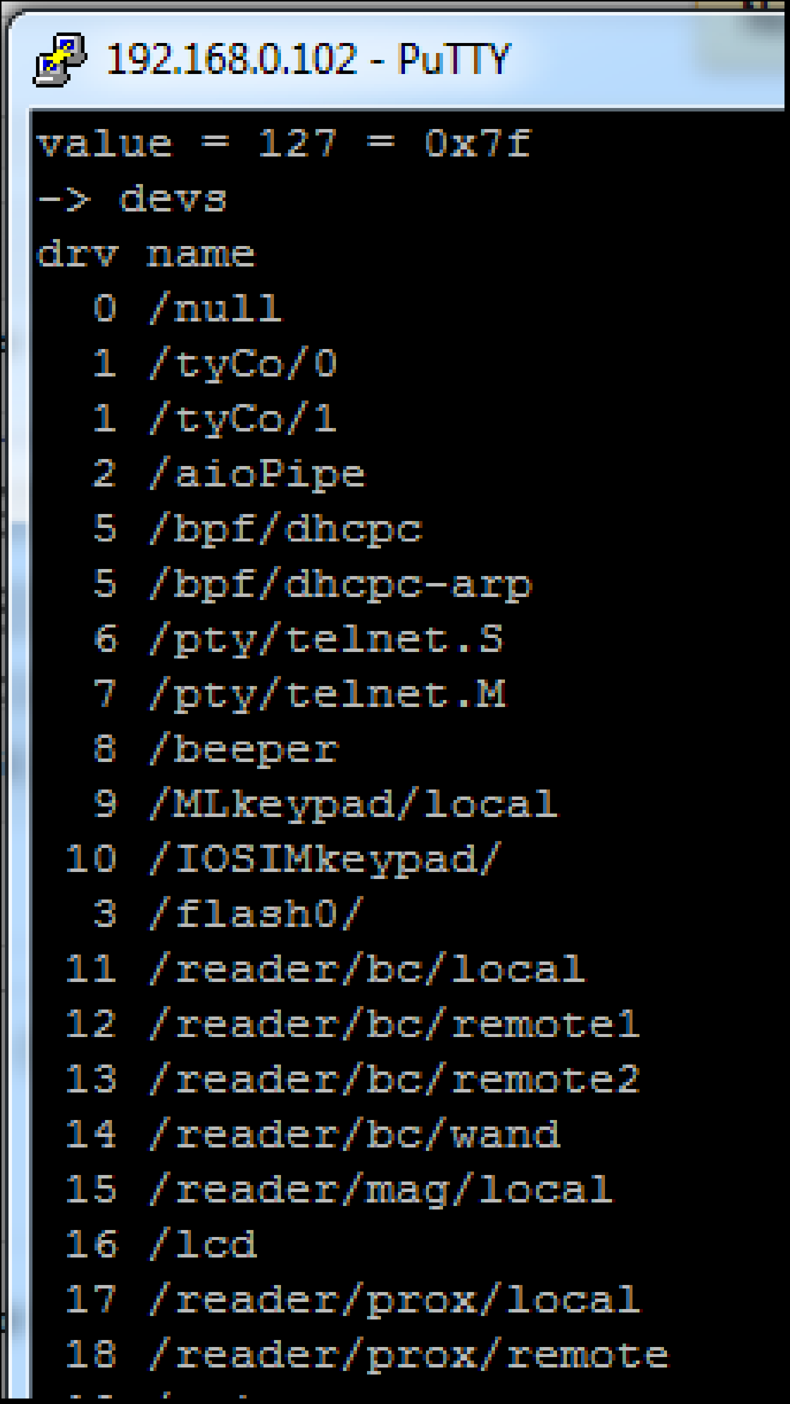
KRONOS
1
2
3
ESC
?


409-001
Rev. G
10R
0L96R MALAYSIA
QQDF0501
EPSON
410-001
Rev. A
CPLD JTAG
MADE IN CHINA
Vista/Win7

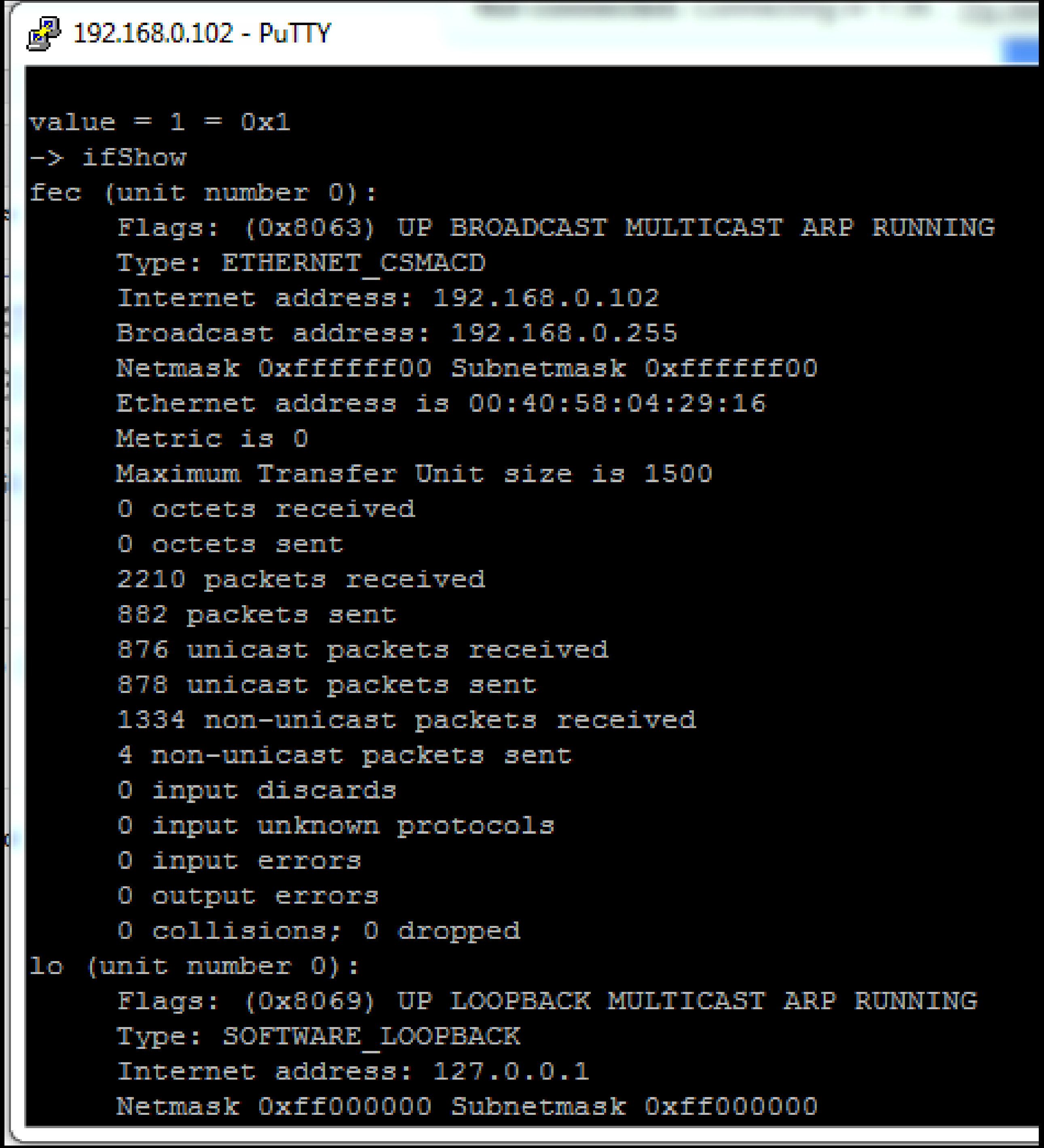

R90
C52
6500407-001 RevD
Kronos MADE IN CHINA
R122
R138
C73

Interesting Items

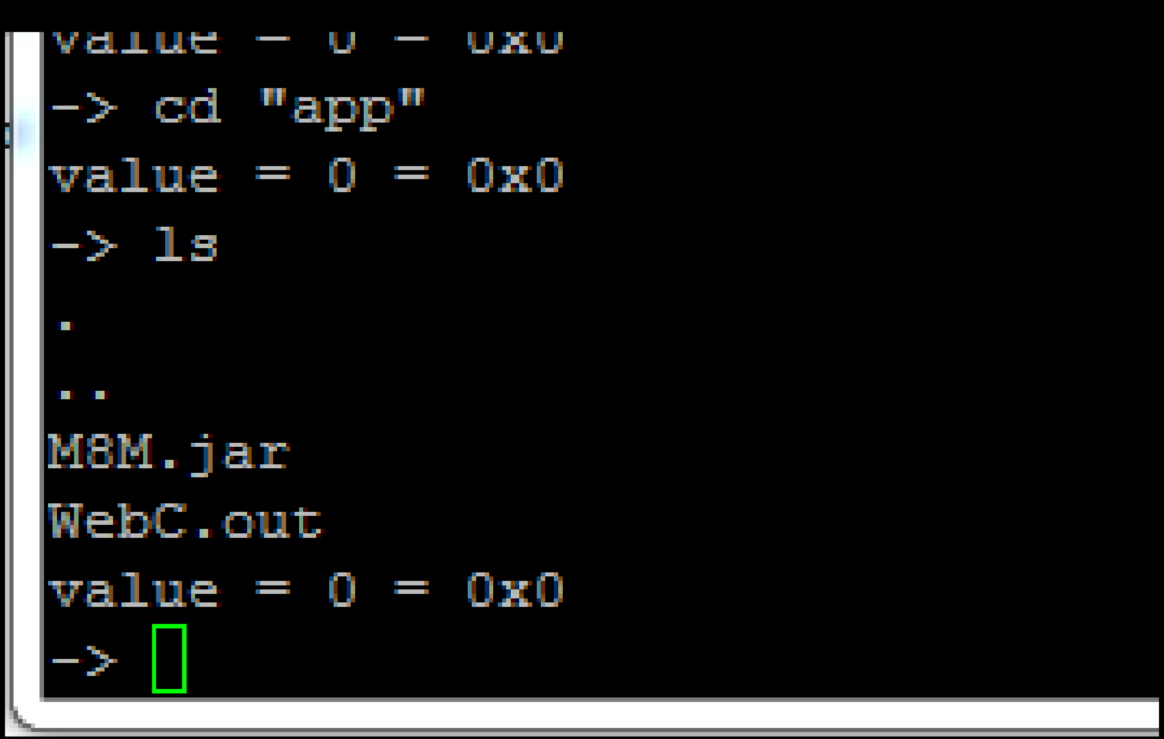
- VxWorks on PowerPC
- VxWorks FTP
- VxWorks Telnet
- Web server
  - Server: Allegro-Software-RomPager/4.32
  - WWW-Authenticate: Basic realm="Browser"



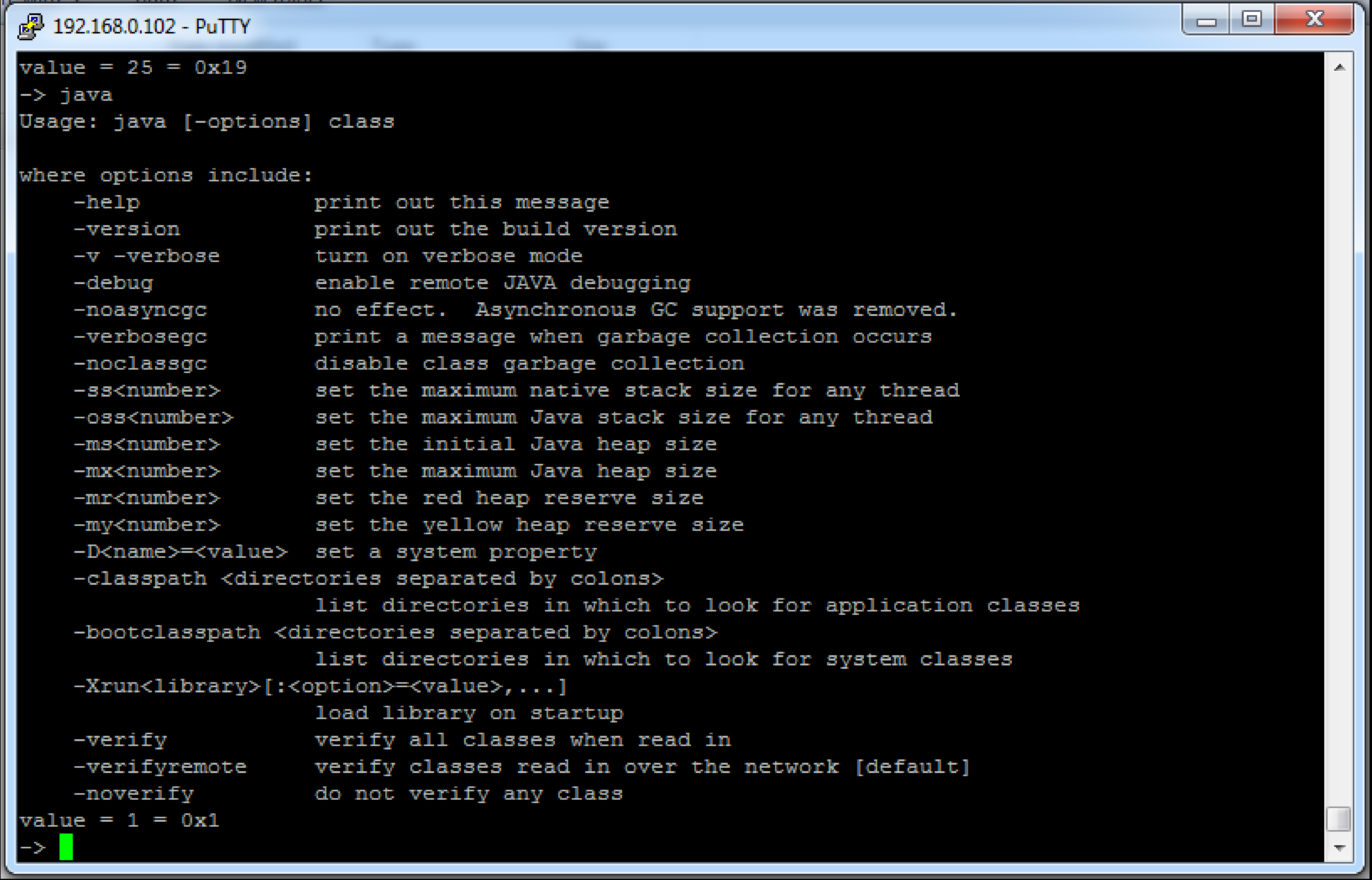
```
value = 127 = 0x7f
-> devs
drv name
  0 /null
  1 /tyCo/0
  1 /tyCo/1
  2 /aioPipe
  5 /bpf/dhcpc
  5 /bpf/dhcpc-arp
  6 /pty/telnet.S
  7 /pty/telnet.M
  8 /beeper
  9 /MLkeypad/local
 10 /IOSIMkeypad/
  3 /flash0/
 11 /reader/bc/local
 12 /reader/bc/remote1
 13 /reader/bc/remote2
 14 /reader/bc/wand
 15 /reader/mag/local
 16 /lcd
 17 /reader/prox/local
 18 /reader/prox/remote
```



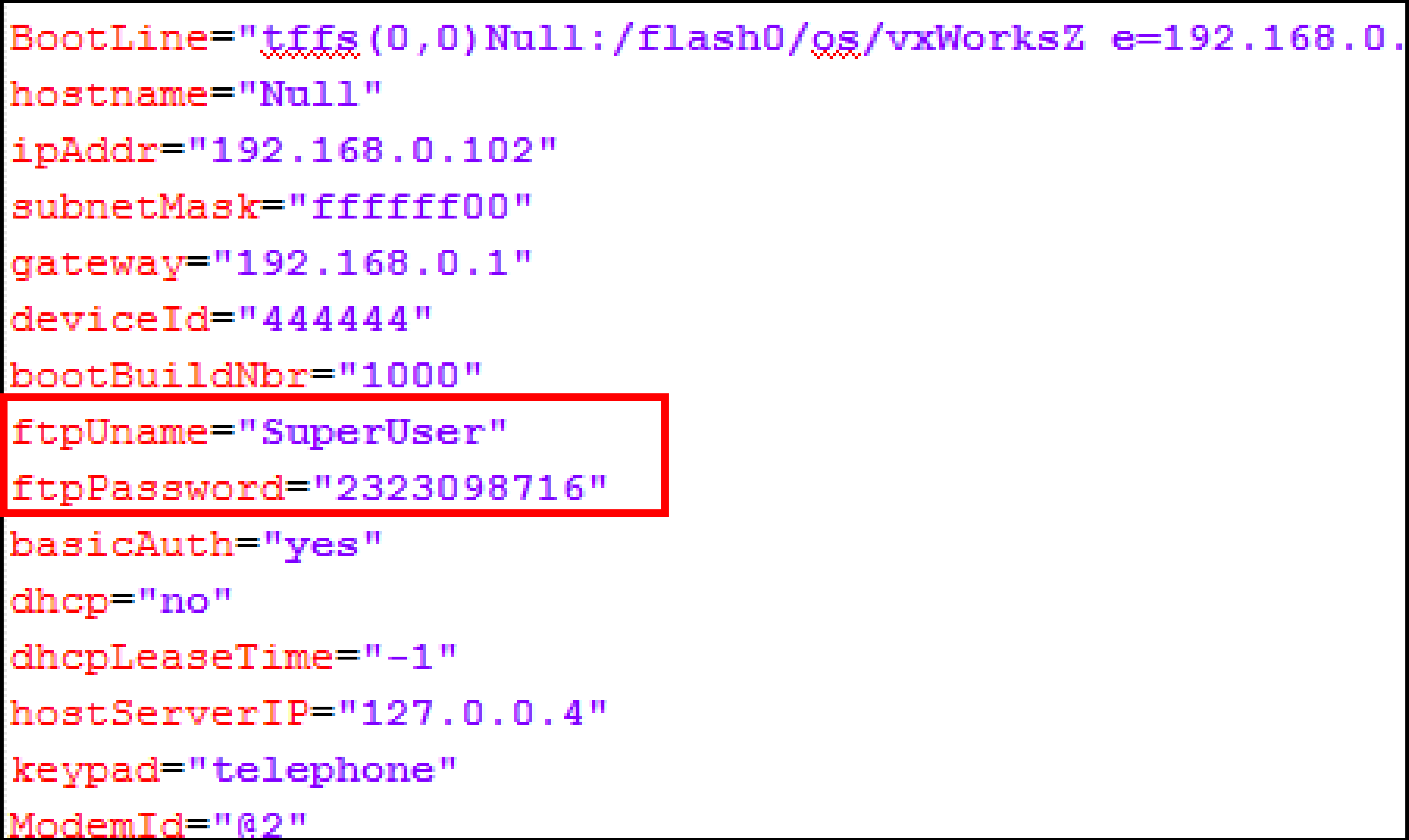
```
value = 1 = 0x1
-> ifShow
fec (unit number 0):
     Flags: (0x8063) UP BROADCAST MULTICAST ARP RUNNING
     Type: ETHERNET_CSMACD
     Internet address: 192.168.0.102
     Broadcast address: 192.168.0.255
     Netmask 0xffffff00 Subnetmask 0xffffff00
     Ethernet address is 00:40:58:04:29:16
     Metric is 0
     Maximum Transfer Unit size is 1500
     0 octets received
     0 octets sent
     2210 packets received
     882 packets sent
     876 unicast packets received
     878 unicast packets sent
     1334 non-unicast packets received
     4 non-unicast packets sent
     0 input discards
     0 input unknown protocols
     0 input errors
     0 output errors
     0 collisions; 0 dropped
lo (unit number 0):
     Flags: (0x8069) UP LOOPBACK MULTICAST ARP RUNNING
     Type: SOFTWARE_LOOPBACK
     Internet address: 127.0.0.1
     Netmask 0xff000000 Subnetmask 0xff000000
```



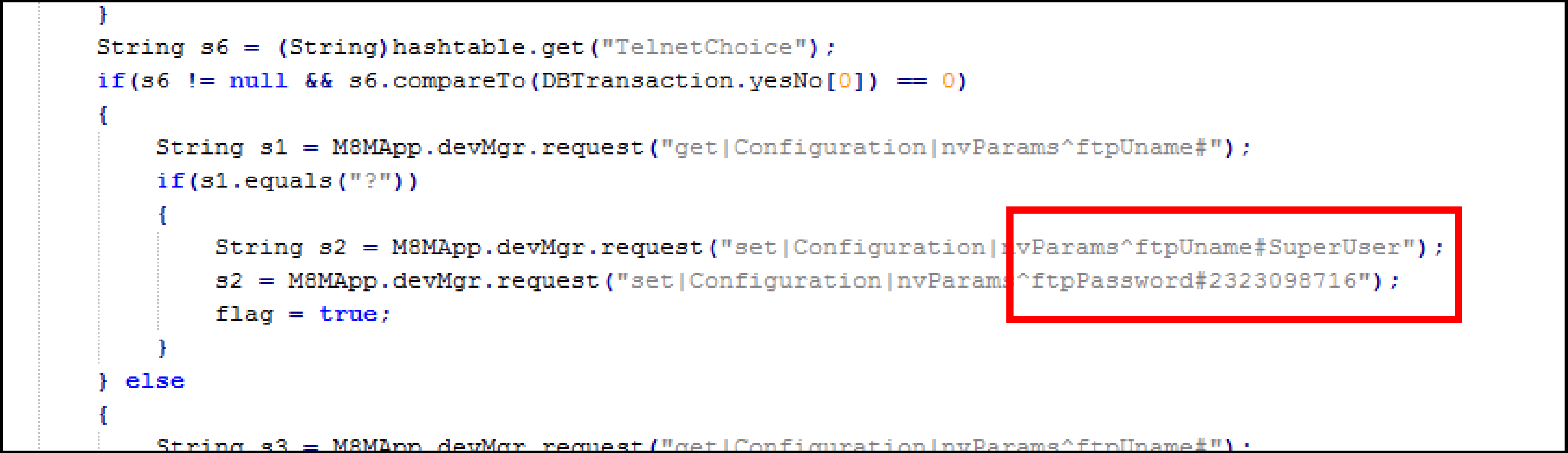
```
value = 0 = 0x0
-> cd "app"
value = 0 = 0x0
-> ls
.
..
M8M.jar
WebC.out
value = 0 = 0x0
->
```



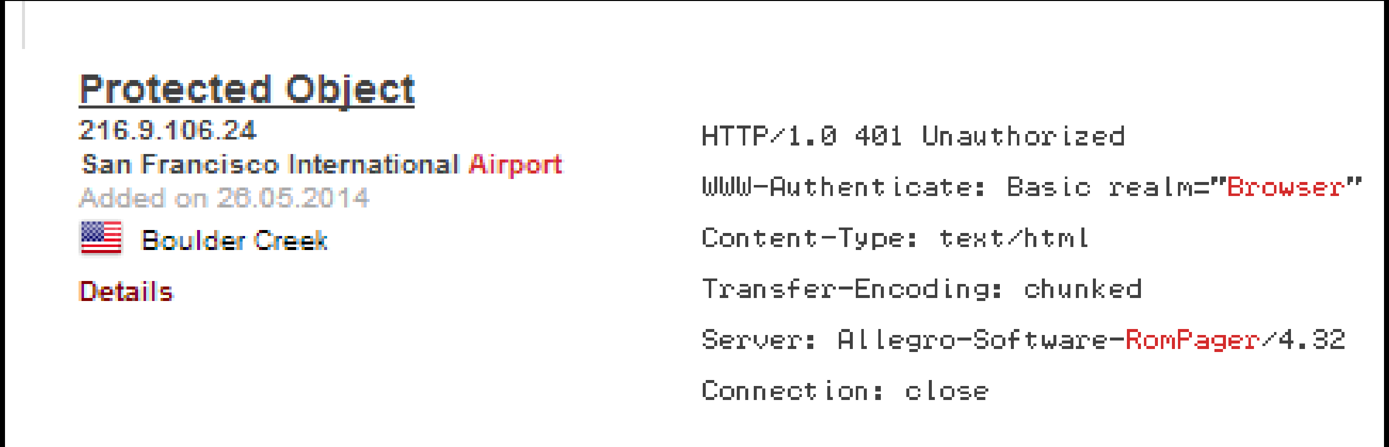
```
value = 25 = 0x19
-> java
Usage: java [-options] class

where options include:
    -help             print out this message
    -version          print out the build version
    -v -verbose       turn on verbose mode
    -debug            enable remote JAVA debugging
    -noasyncgc        no effect.  Asynchronous GC support was removed.
    -verbosegc        print a message when garbage collection occurs
    -noclassgc        disable class garbage collection
    -ss<number>       set the maximum native stack size for any thread
    -oss<number>      set the maximum Java stack size for any thread
    -ms<number>       set the initial Java heap size
    -mx<number>       set the maximum Java heap size
    -mr<number>       set the red heap reserve size
    -my<number>       set the yellow heap reserve size
    -D<name>=<value>  set a system property
    -classpath <directories separated by colons>
                      list directories in which to look for application classes
    -bootclasspath <directories separated by colons>
                      list directories in which to look for system classes
    -Xrun<library>[:<option>=<value>,...]
                      load library on startup
    -verify           verify all classes when read in
    -verifyremote     verify classes read in over the network [default]
    -noverify         do not verify any class
value = 1 = 0x1
->
```



```
BootLine="tffs(0,0)Null:/flash0/os/vxWorksZ e=192.168.0.
hostname="Null"
ipAddr="192.168.0.102"
subnetMask="ffffff00"
gateway="192.168.0.1"
deviceId="444444"
bootBuildNbr="1000"
ftpUname="SuperUser"
ftpPassword="2323098716"
basicAuth="yes"
dhcp="no"
dhcpLeaseTime="-1"
hostServerIP="127.0.0.4"
keypad="telephone"
ModemId="@2"
```



```
}
String s6 = (String)hashtable.get("TelnetChoice");
if(s6 != null && s6.compareTo(DBTransaction.yesNo[0]) == 0)
{
    String s1 = M8MApp.devMgr.request("get|Configuration|nvParams^ftpUname#");
    if(s1.equals("?"))
    {
        String s2 = M8MApp.devMgr.request("set|Configuration|nvParams^ftpUname#SuperUser");
        s2 = M8MApp.devMgr.request("set|Configuration|nvParams^ftpPassword#2323098716");
        flag = true;
    }
} else
{
    String s3 = M8MApp.devMgr.request("get|Configuration|nvParams^ftpUname#");
```



Protected Object

216.9.106.24

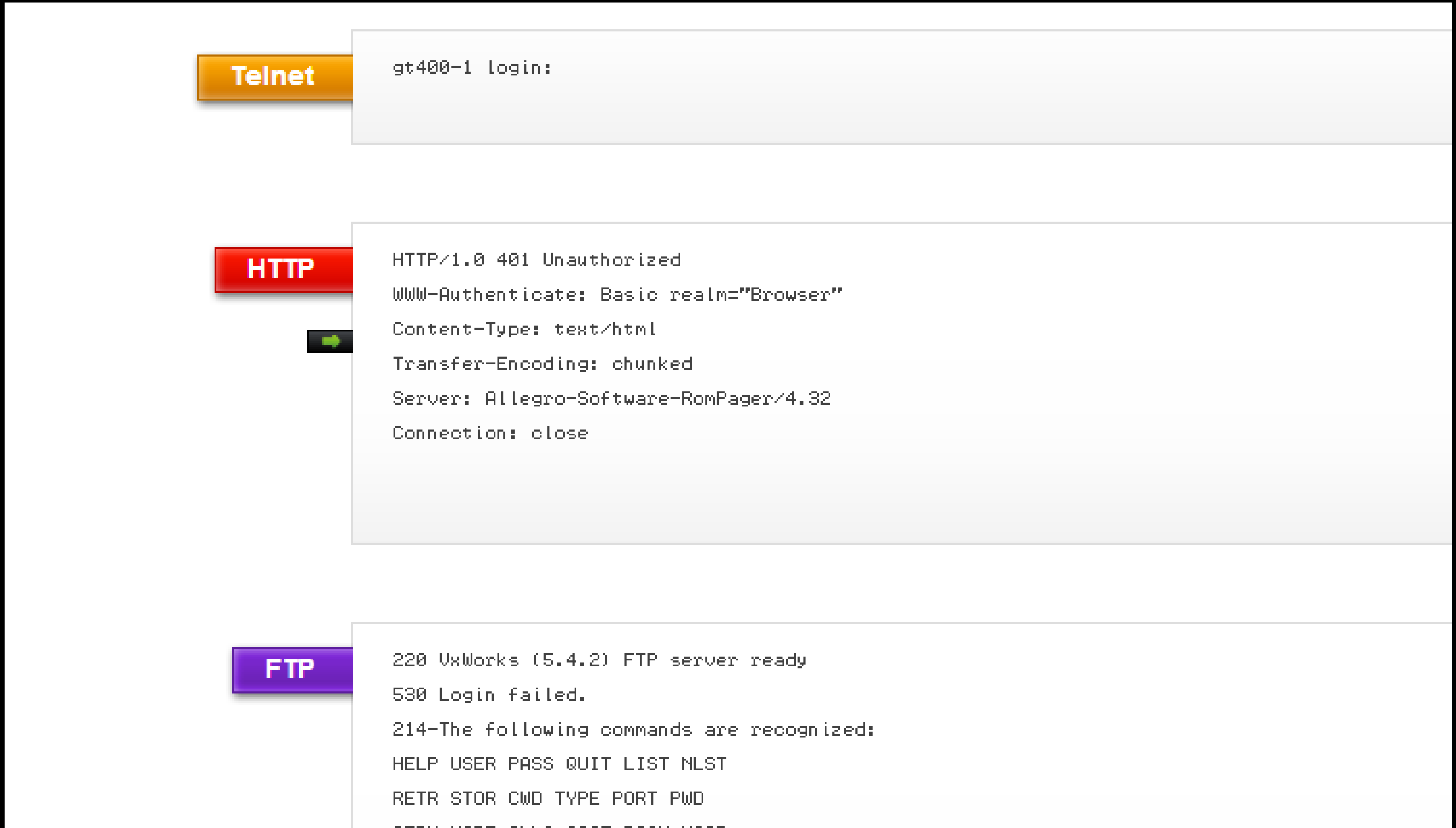
San Francisco International Airport

Added on 26.05.2014

Boulder Creek

Details

```
HTTP/1.0 401 Unauthorized
WWW-Authenticate: Basic realm="Browser"
Content-Type: text/html
Transfer-Encoding: chunked
Server: Allegro-Software-RomPager/4.32
Connection: close
```



Telnet

```
gt400-1 login:
```

HTTP

```
HTTP/1.0 401 Unauthorized
WWW-Authenticate: Basic realm="Browser"
Content-Type: text/html
Transfer-Encoding: chunked
Server: Allegro-Software-RomPager/4.32
Connection: close
```

FTP

```
220 VxWorks (5.4.2) FTP server ready
530 Login failed.
214-The following commands are recognized:
HELP USER PASS QUIT LIST NLST
RETR STOR CWD TYPE PORT PWD
```

Backdoors…

- FTP and Telnet - SuperUser:2323098716
  - config\devCfg.xml file
  - MaintValidation.class file within the m8m.jar
- Web - KronosBrowser:KronosBrowser
- ~6000 on the Internet, two major airports

Here’s a thought…

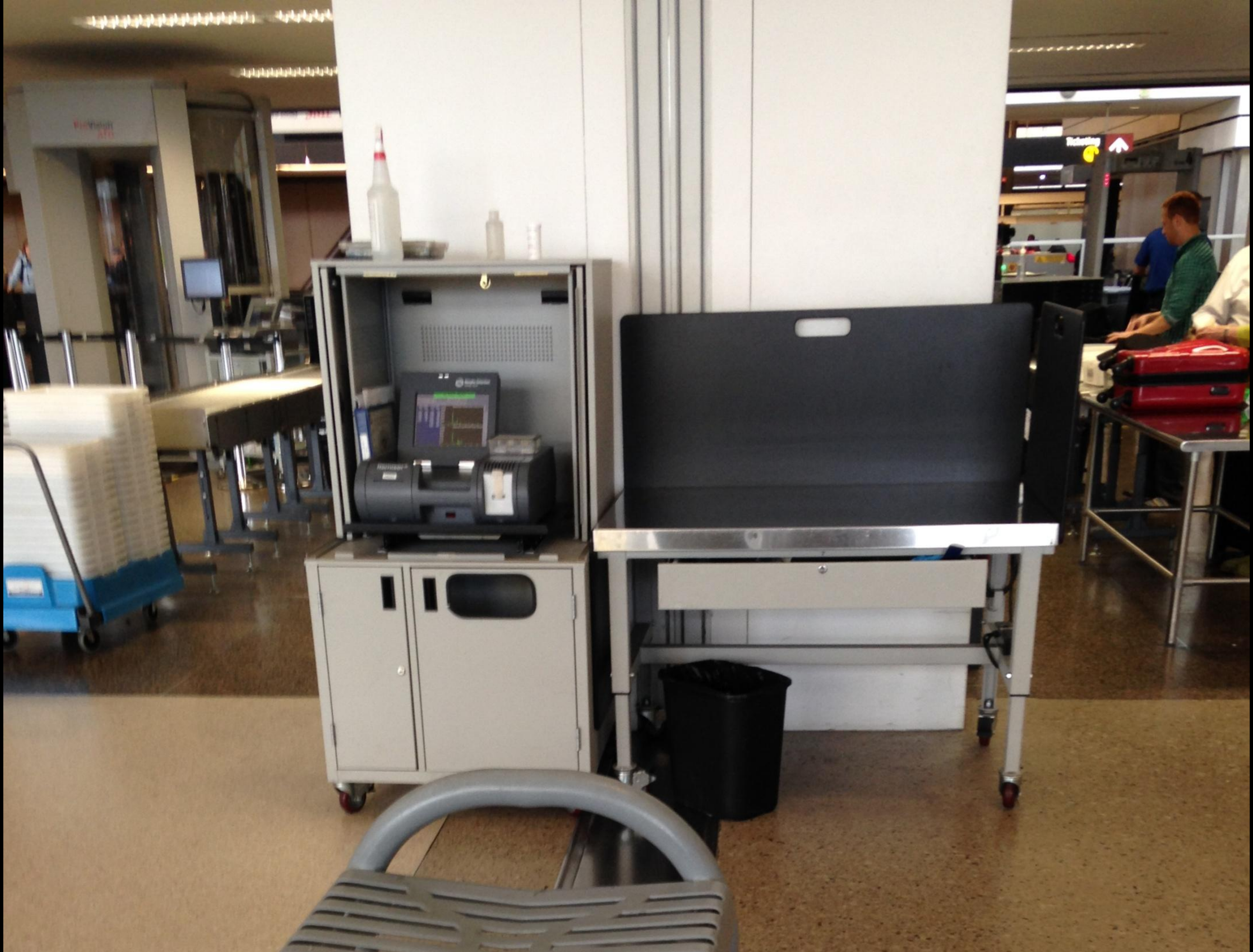
- Foreign made main board on TSA Net that can track which TSA personnel are on the floor at any given moment
- Hardcoded FTP password/backdoor
- Hardcoded Telnet password/backdoor which gives up a VxWorks shell
- Hardcoded Web password/backdoor

Does TSA know Kronos 4500’s have Chinese made main boards?

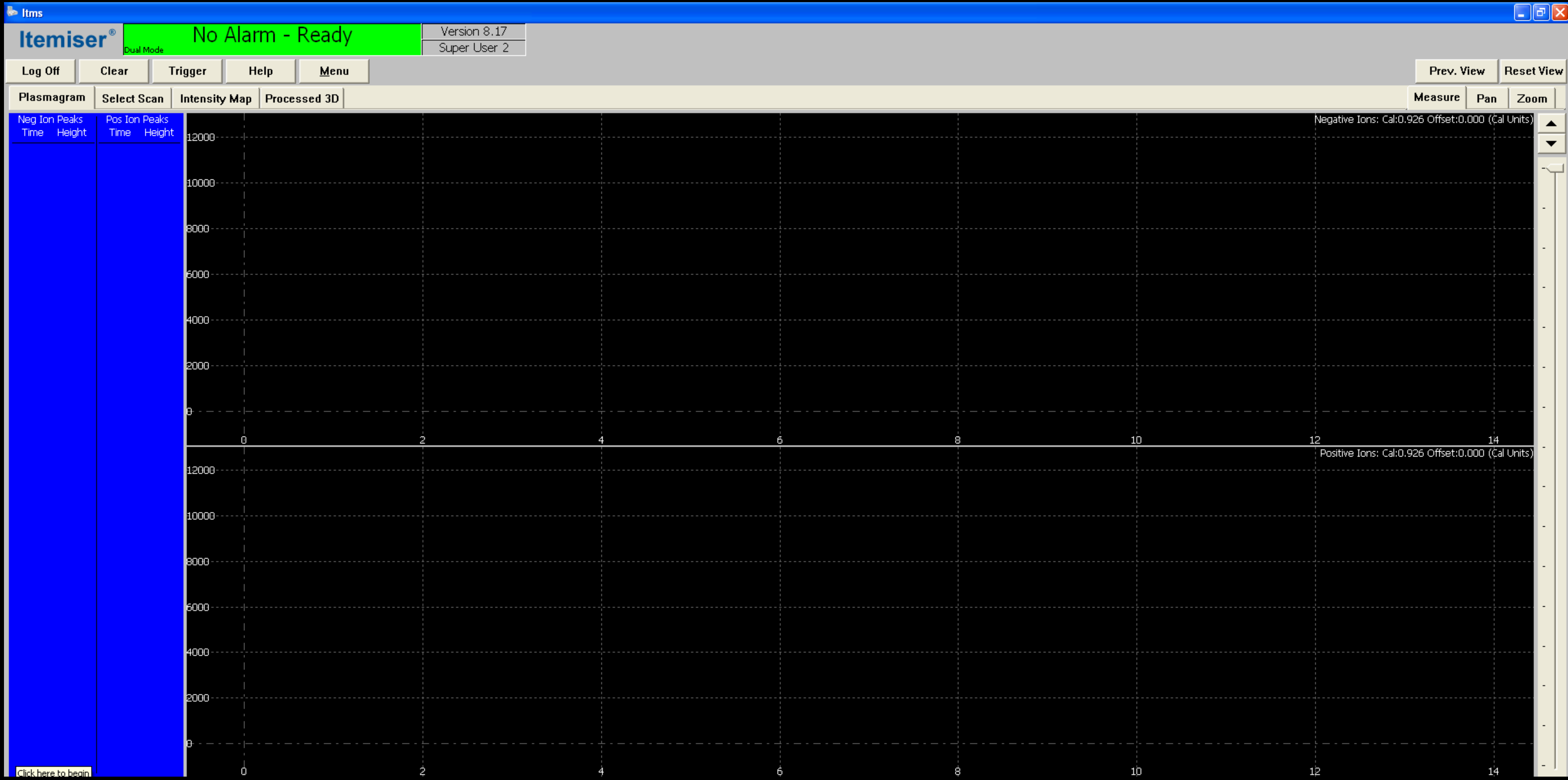
Does the TSA know the software has hardcoded backdoors?

Trust but Verify the Engineering

SAFRAN


Ticketing

TSA
First Aid Kit
S Gates



No Alarm - Ready

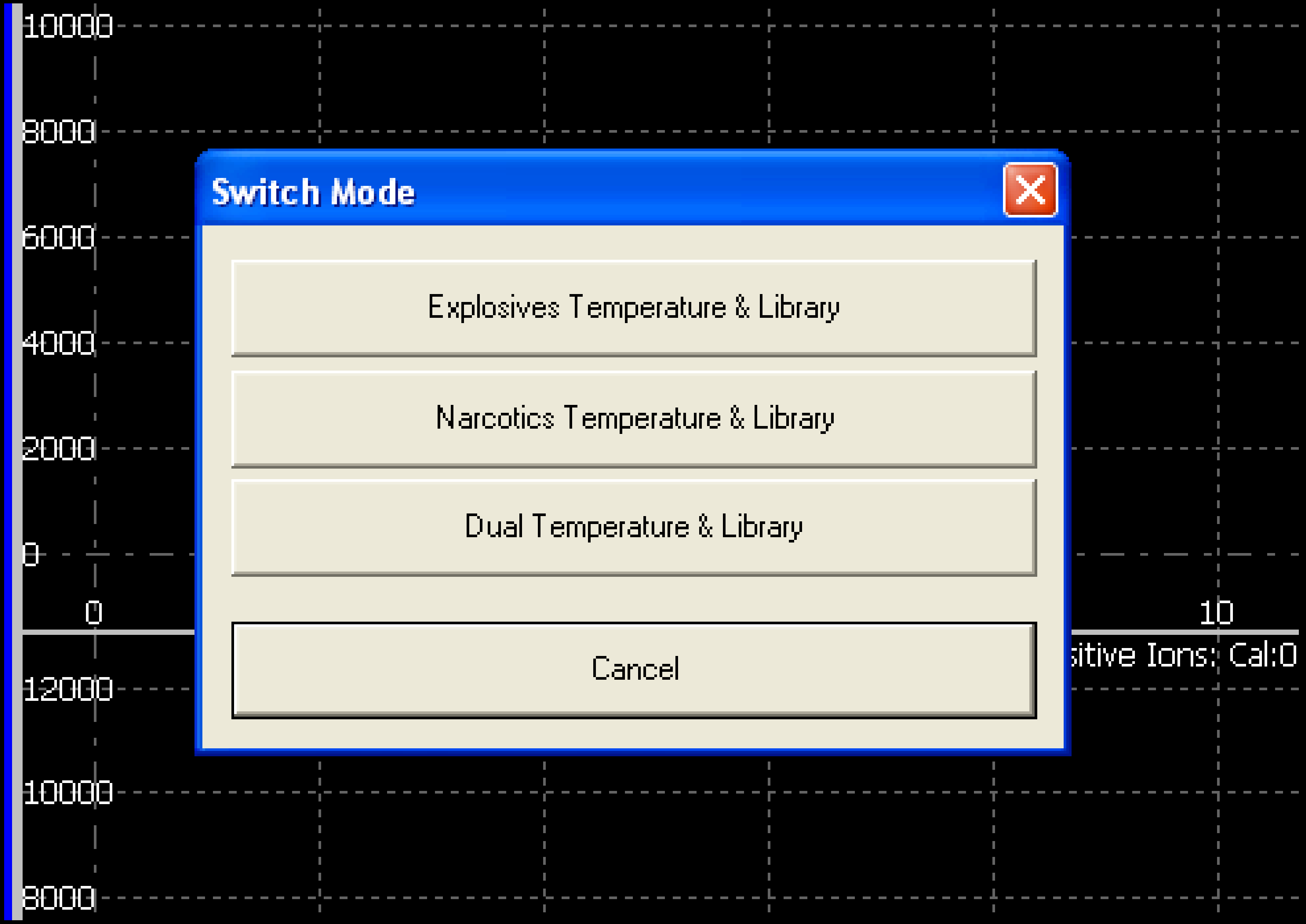
Dual Mode

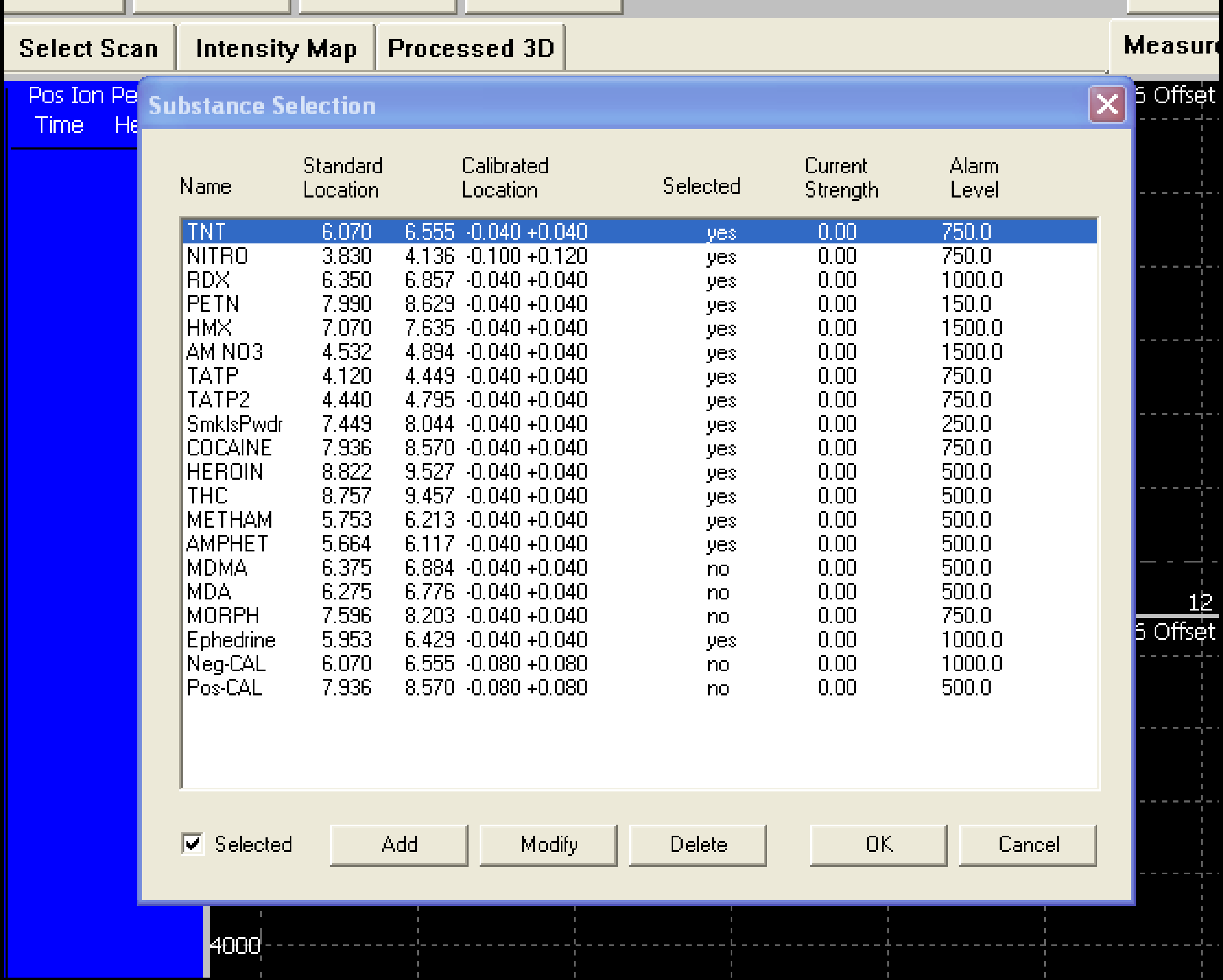
Version 8.17

Super User 2

Negative Ions: Cal:0.926 Offset:0.000 (Cal Units)

Positive Ions: Cal:0.926 Offset:0.000 (Cal Units)


Switch Mode
Explosives Temperature & Library
Narcotics Temperature & Library
Dual Temperature & Library
Cancel
10000
8000
6000
4000
2000
0
0
10
sitive Ions: Cal:0
12000
10000
8000



Substance Selection

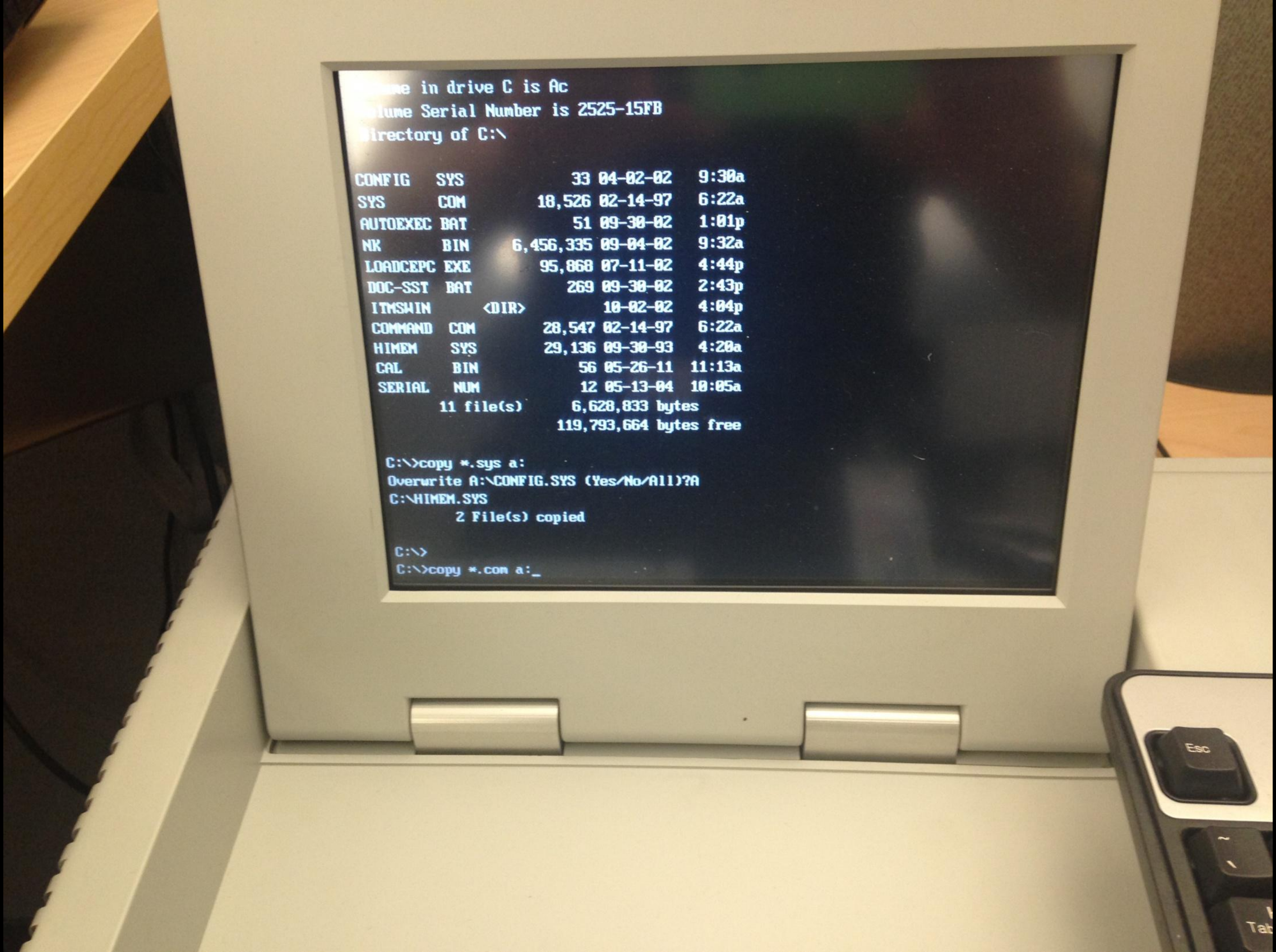
Name	Standard Location	Calibrated Location	Selected	Current Strength	Alarm Level
TNT	6.070	6.555 -0.040 +0.040	yes	0.00	750.0
NITRO	3.830	4.136 -0.100 +0.120	yes	0.00	750.0
RDX	6.350	6.857 -0.040 +0.040	yes	0.00	1000.0
PETN	7.990	8.629 -0.040 +0.040	yes	0.00	150.0
HMX	7.070	7.635 -0.040 +0.040	yes	0.00	1500.0
AM NO3	4.532	4.894 -0.040 +0.040	yes	0.00	1500.0
TATP	4.120	4.449 -0.040 +0.040	yes	0.00	750.0
TATP2	4.440	4.795 -0.040 +0.040	yes	0.00	750.0
SmklsPwdr	7.449	8.044 -0.040 +0.040	yes	0.00	250.0
COCAINE	7.936	8.570 -0.040 +0.040	yes	0.00	750.0
HEROIN	8.822	9.527 -0.040 +0.040	yes	0.00	500.0
THC	8.757	9.457 -0.040 +0.040	yes	0.00	500.0
METHAM	5.753	6.213 -0.040 +0.040	yes	0.00	500.0
AMPHET	5.664	6.117 -0.040 +0.040	yes	0.00	500.0
MDMA	6.375	6.884 -0.040 +0.040	no	0.00	500.0
MDA	6.275	6.776 -0.040 +0.040	no	0.00	500.0
MORPH	7.596	8.203 -0.040 +0.040	no	0.00	750.0
Ephedrine	5.953	6.429 -0.040 +0.040	yes	0.00	1000.0
Neg-CAL	6.070	6.555 -0.080 +0.080	no	0.00	1000.0
Pos-CAL	7.936	8.570 -0.080 +0.080	no	0.00	500.0

Itemiser

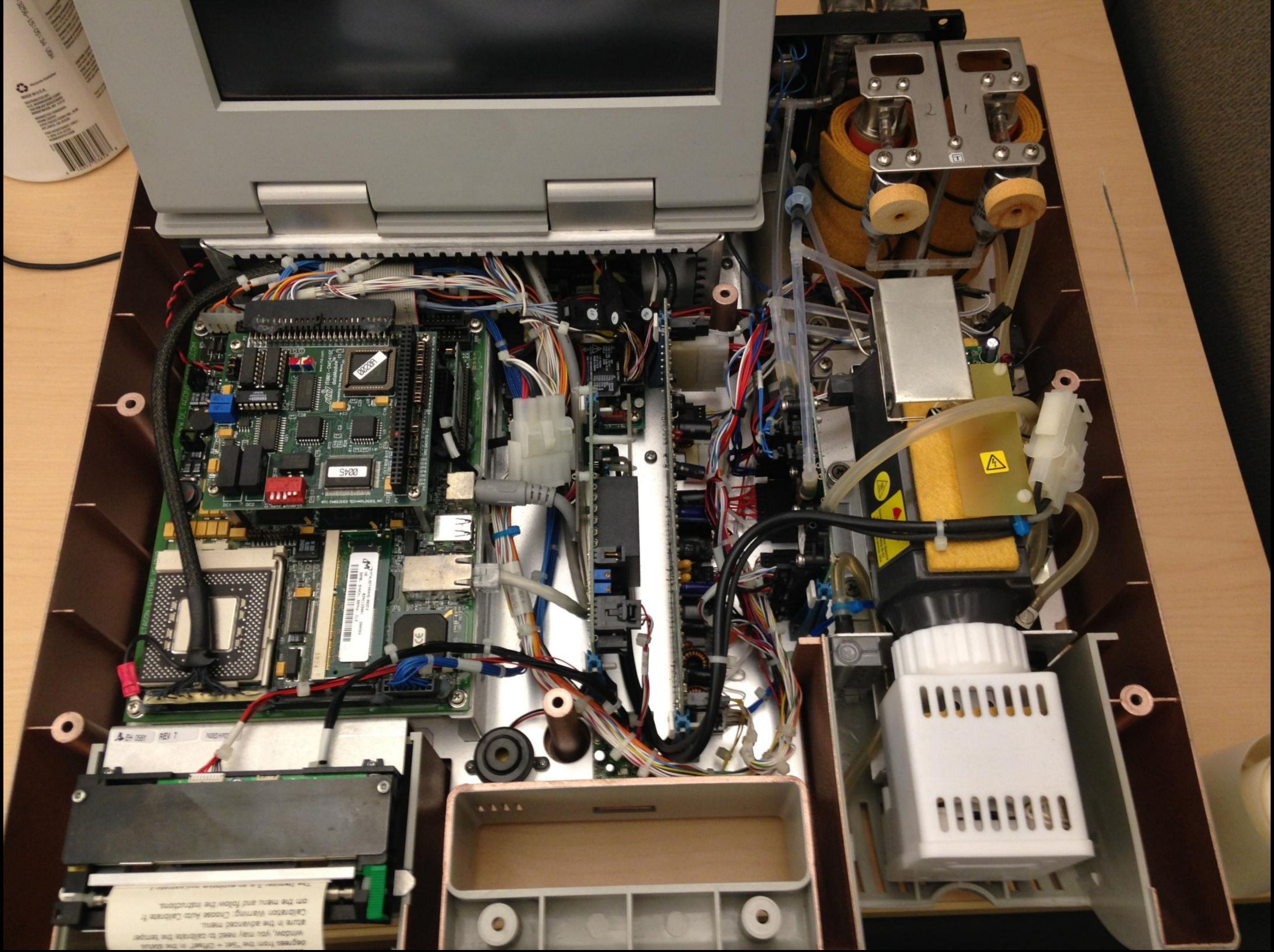
- X86 (Pentium Processor)
- Windows CE
- Disk on chip with ~7.5 meg main program
- PS2, Floppy, USB
- IrDA?!?!?!?!

File System

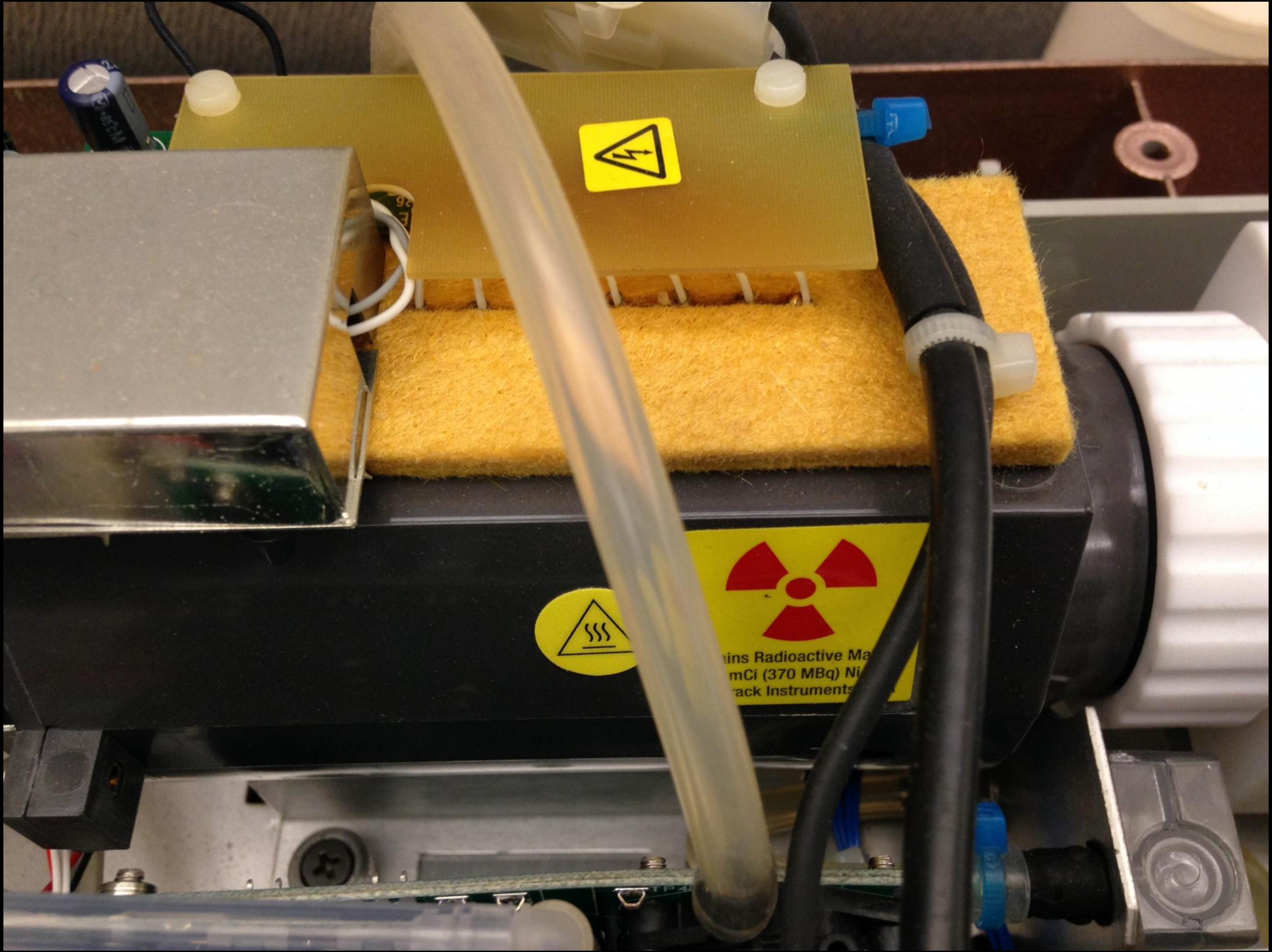
- ITMSCE.exe (Main Application)
- Users.bin (User Accounts)
- Config.bin (Settings for detection)
- Options.bin
- History.bin
- Alarms (folder)

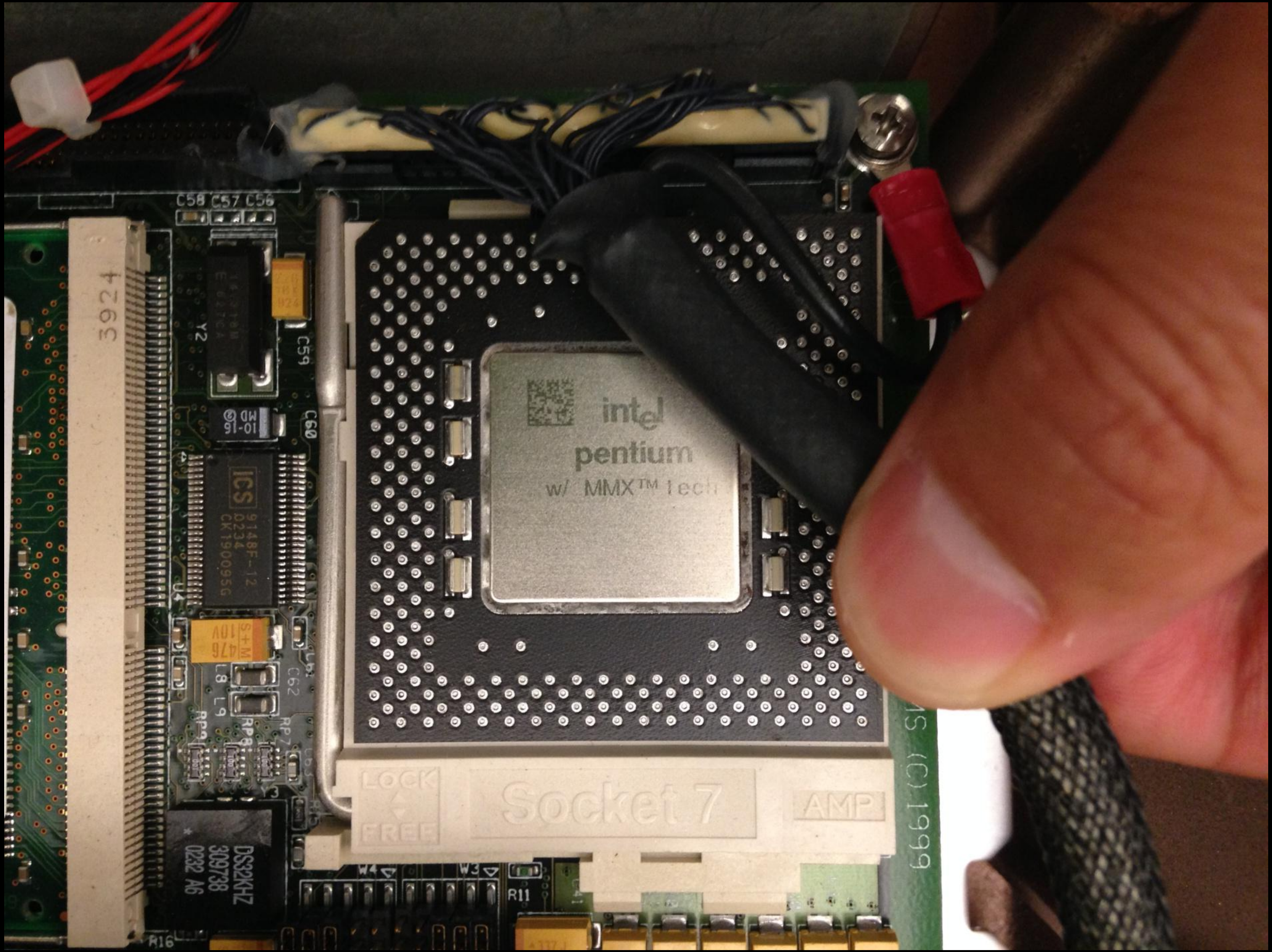


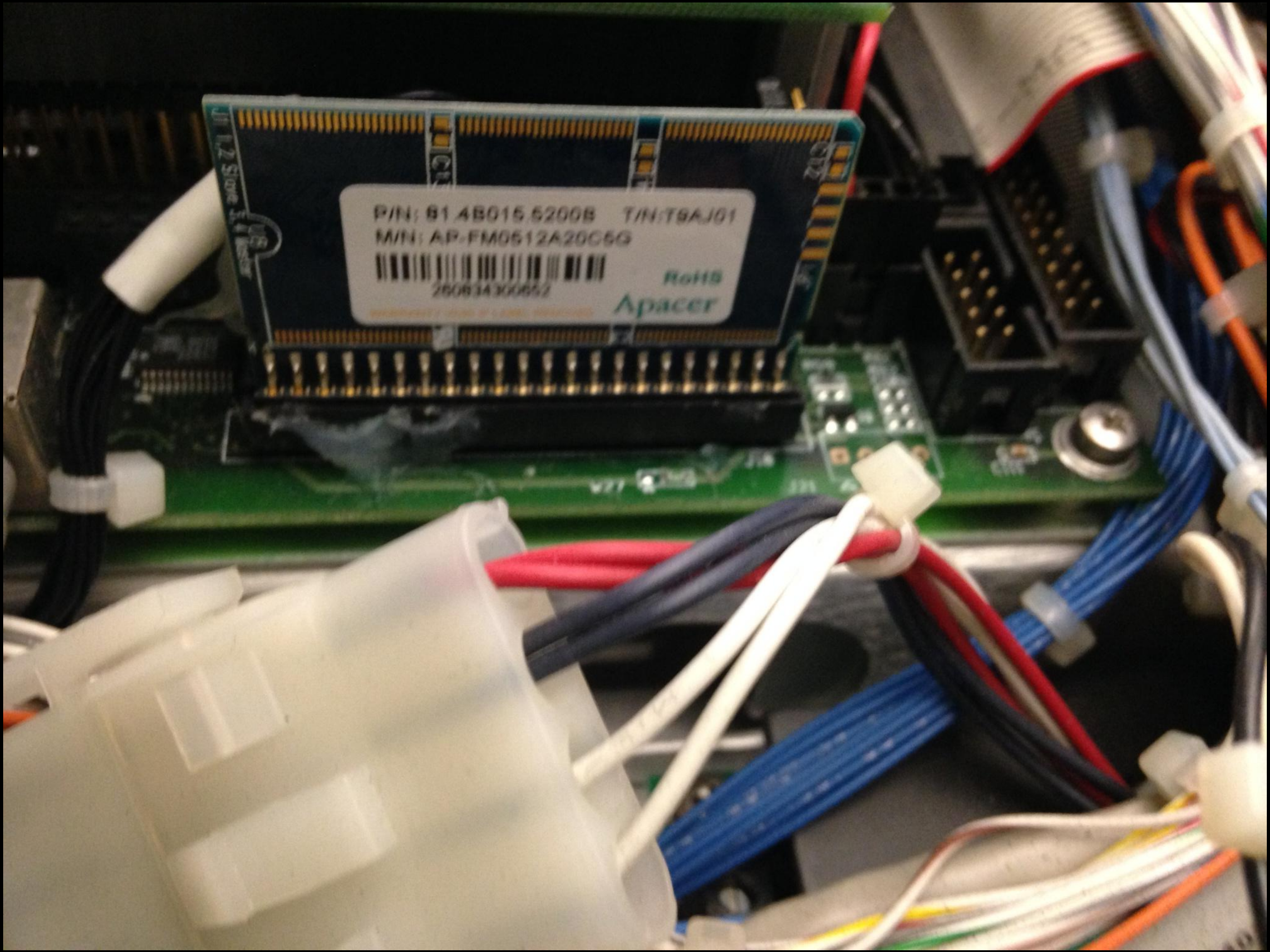
```
 Volume in drive C is Ac
 Volume Serial Number is 2525-15FB
 Directory of C:\

CONFIG   SYS            33 04-02-02   9:30a
SYS      COM        18,526 02-14-97   6:22a
AUTOEXEC BAT            51 09-30-02   1:01p
NK       BIN     6,456,335 09-04-02   9:32a
LOADCEPC EXE        95,868 07-11-02   4:44p
DOC-SST  BAT           269 09-30-02   2:43p
ITMSWIN      <DIR>         10-02-02   4:04p
COMMAND  COM        28,547 02-14-97   6:22a
HIMEM    SYS        29,136 09-30-93   4:20a
CAL      BIN            56 05-26-11  11:13a
SERIAL   NUM            12 05-13-04  10:05a
        11 file(s)      6,628,833 bytes
                      119,793,664 bytes free

C:\>copy *.sys a:
Overwrite A:\CONFIG.SYS (Yes/No/All)?A
C:\HIMEM.SYS
        2 File(s) copied

C:\>
C:\>copy *.com a:_
```

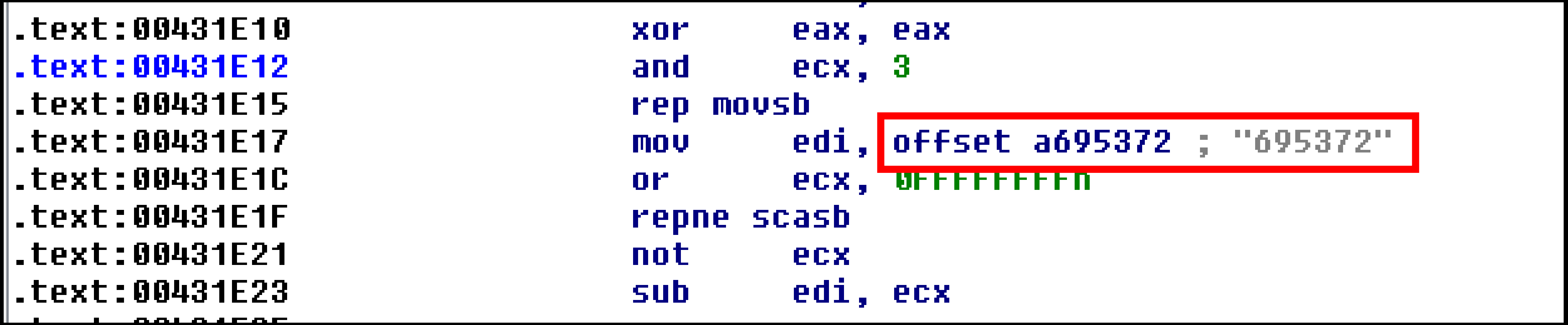


REV 7
0045

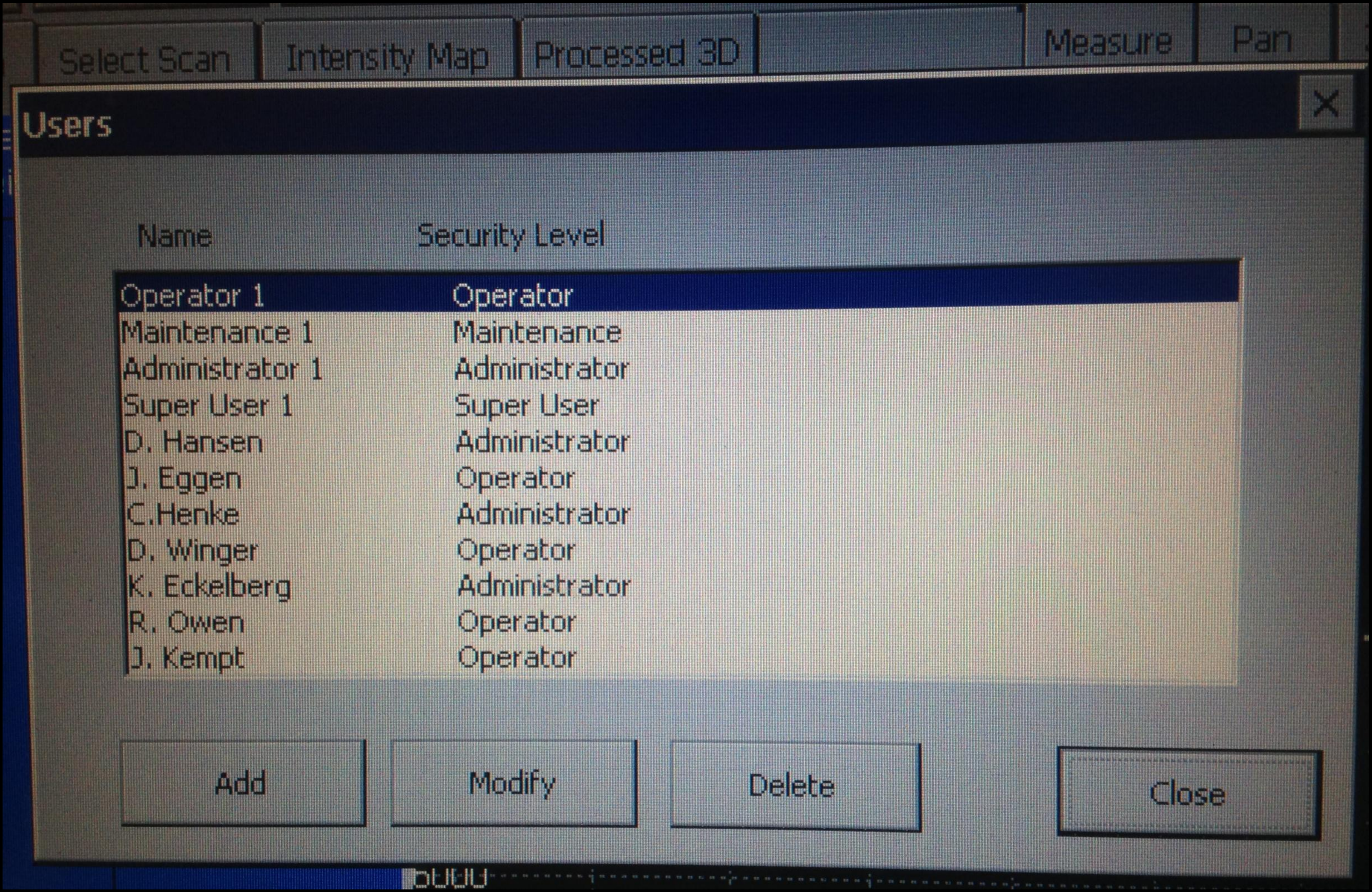

ains Radioactive Ma
mCi (370 MBq) Ni
rack Instruments


intel
pentium
w/ MMX™ tech
Socket 7
LOCK
FREE
AMP
3924
ICS
9148F-12
(C)1999
DS2KHZ
309738
0232 A6
C58 C57 C56
C59
C60
C62
R11
R16
W4
W3
Y2
U4
L8
L9
RP8
RP7


P/N: 81.4B015.5200B T/N:T9AJ01
M/N: AP-FM0512A20C5G
260834300652
RoHS
Apacer



```
.text:00431E10                 xor     eax, eax
.text:00431E12                 and     ecx, 3
.text:00431E15                 rep movsb
.text:00431E17                 mov     edi, offset a695372 ; "695372"
.text:00431E1C                 or      ecx, 0FFFFFFFFh
.text:00431E1F                 repne scasb
.text:00431E21                 not     ecx
.text:00431E23                 sub     edi, ecx
```

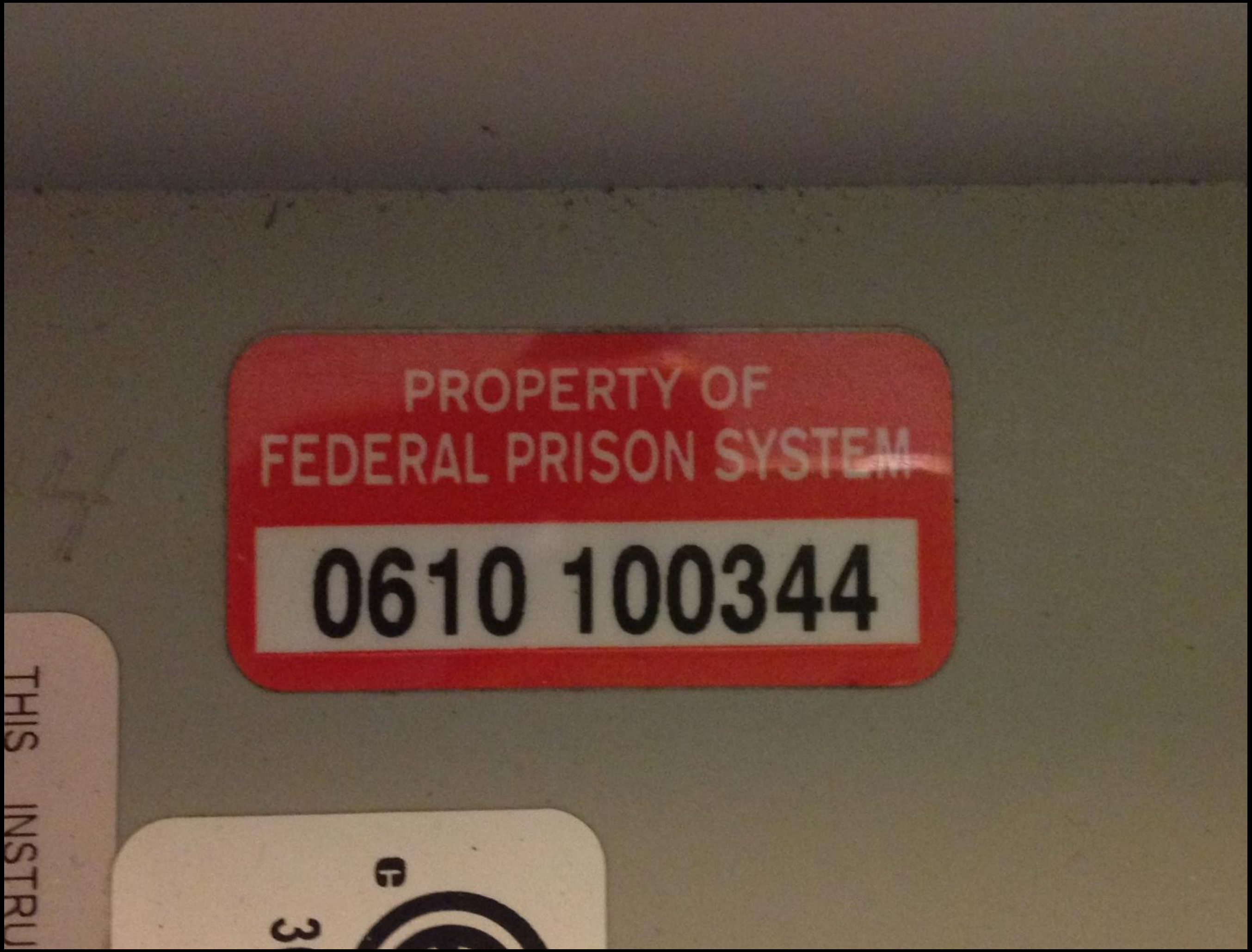


Users

Name	Security Level
Operator 1	Operator
Maintenance 1	Maintenance
Administrator 1	Administrator
Super User 1	Super User
D. Hansen	Administrator
J. Eggen	Operator
C.Henke	Administrator
D. Winger	Operator
K. Eckelberg	Administrator
R. Owen	Operator
J. Kempt	Operator

Users on the user menu Itemiser

- Operator 1
- Maintenance 1
- Administrator 1
- Super User 1
- <various user accounts>



PROPERTY OF
FEDERAL PRISON SYSTEM

0610 100344

Users in the Binary

- Operator 1
- Maintenance 1
- Administrator 1
- Super User 1
- Administrator 2
- Super User 2

Users in the Binary vs User Menu

Binary

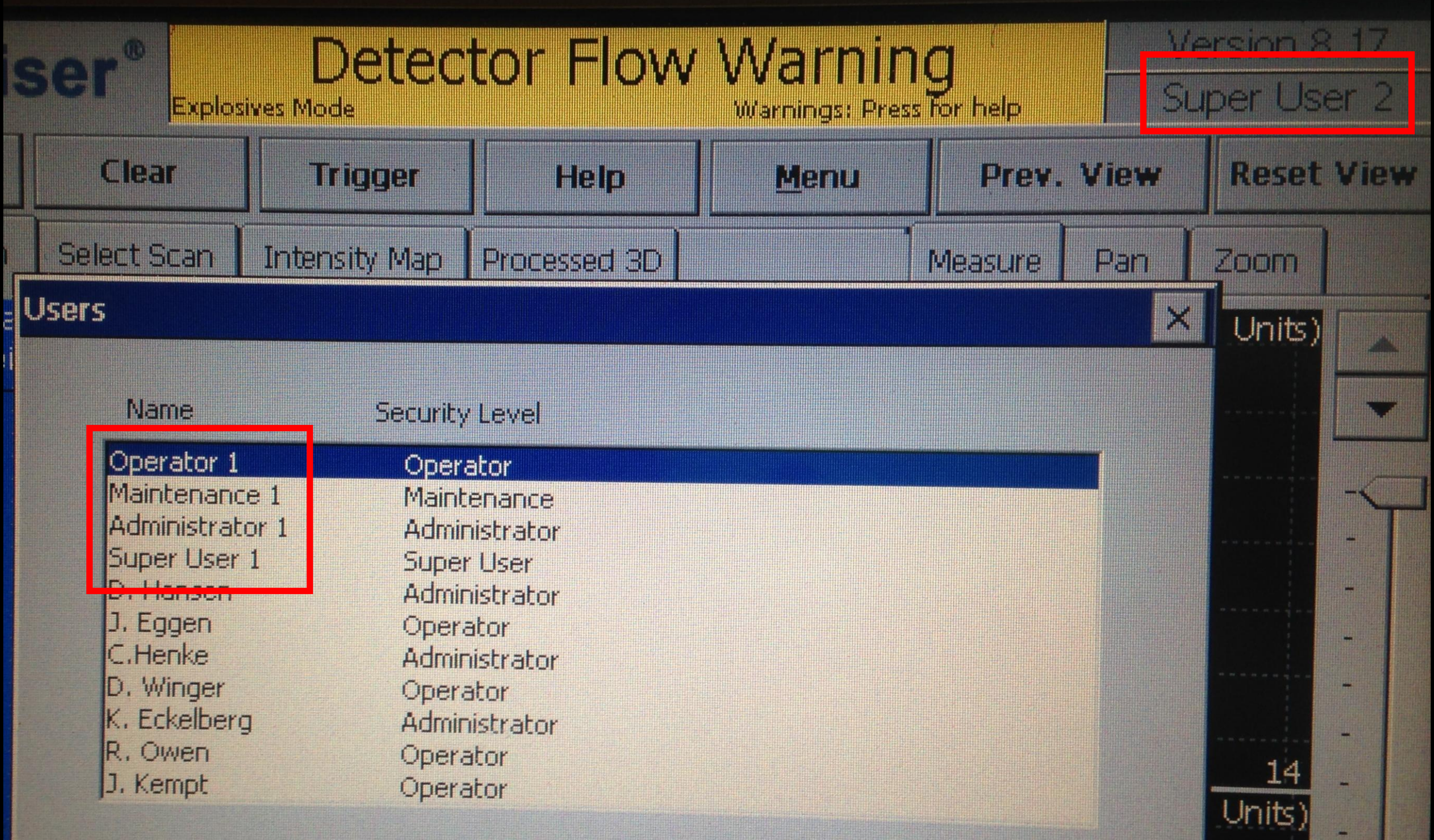
- Operator 1
- Maintenance 1
- Administrator 1
- Super User 1
- Administrator 2
- Super User 2

User Menu

- Operator 1
- Maintenance 1
- Administrator 1
- Super User 1

Two Backdoor Accounts

- Administrator 2: 838635
- SuperUser 2: 695372



Users

Name	Security Level
Operator 1	Operator
Maintenance 1	Maintenance
Administrator 1	Administrator
Super User 1	Super User
D. Hansen	Administrator
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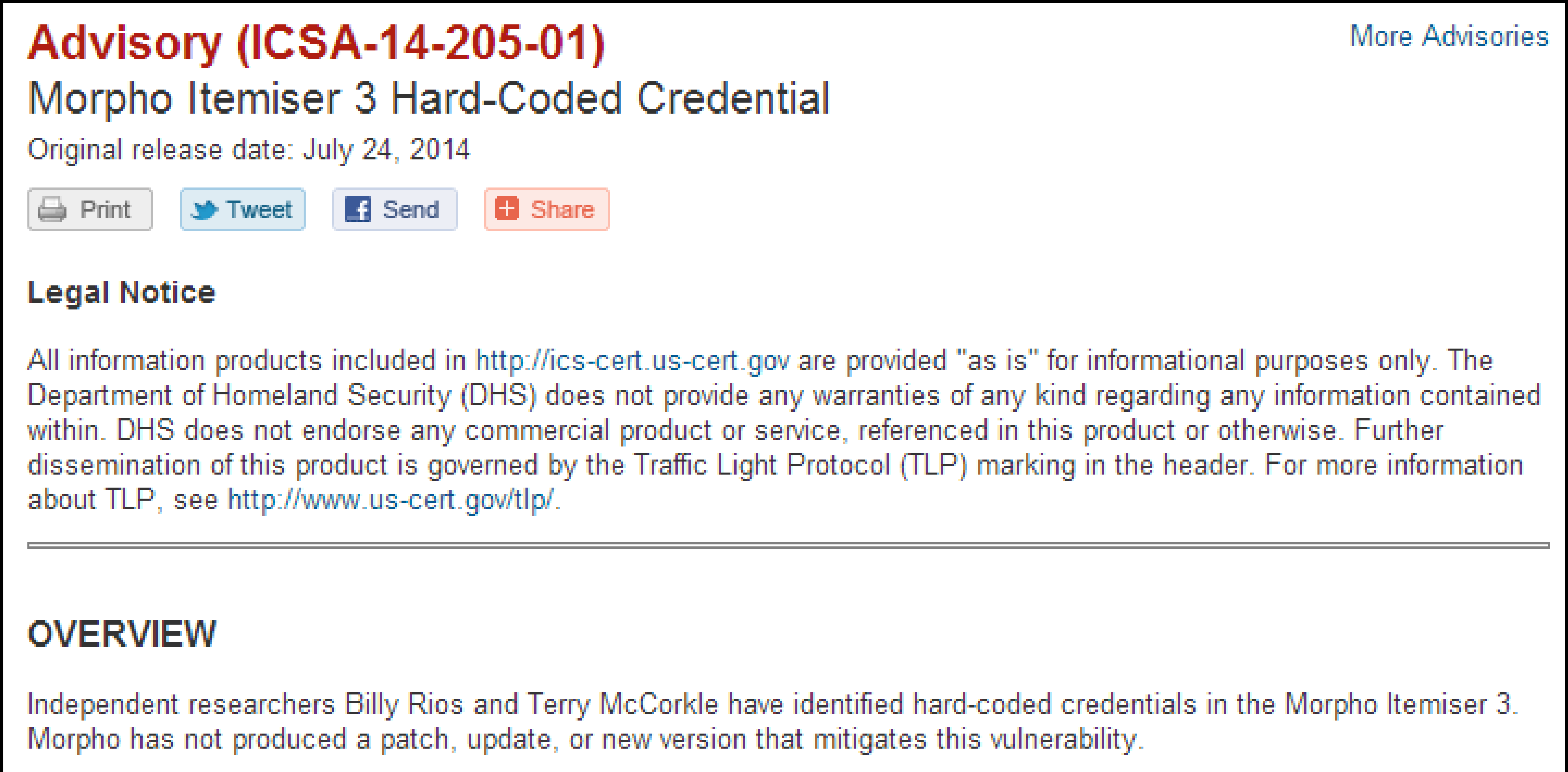
C.Henke	Administrator
D. Winger	Operator
K. Eckelberg	Administrator
R. Owen	Operator
J. Kempt	Operator



Advisory (ICSA-14-205-01)

Morpho Itemiser 3 Hard-Coded Credential

Original release date: July 24, 2014

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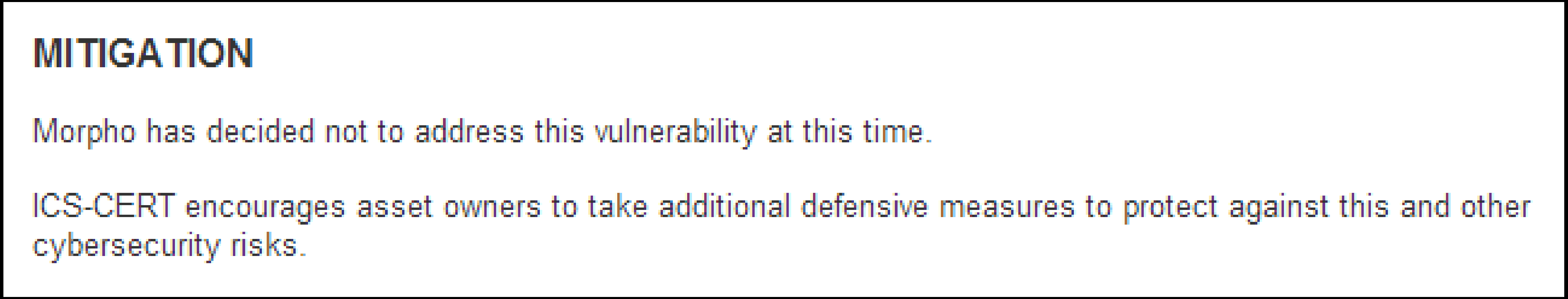
OVERVIEW

Independent researchers Billy Rios and Terry McCorkle have identified hard-coded credentials in the Morpho Itemiser 3. Morpho has not produced a patch, update, or new version that mitigates this vulnerability.



MITIGATION

Morpho has decided not to address this vulnerability at this time.

ICS-CERT encourages asset owners to take additional defensive measures to protect against this and other cybersecurity risks.

Blame the vendor?

This is actually, TSA’s Fault

- TSA depends on this equipment to do their job
- TSA operators do not have the expertise to detect exploited devices
- TSA has not conducted adequate threat models on how these devices are designed from a cyber security standpoint
- TSA has not audited these devices for even the most basic security issues
- Vendors develop devices to meet TSA requirements
- TSA certifies devices it deems satisfactory
- We pay for all this…

I hope that someone (maybe the GAO?) **trusts** what the TSA is telling us about their devices, but **verifies** the engineering is a reality

If you have embedded devices, I would hope you would do the same for your devices

BEFORE you fork over the $$!

Questions?