

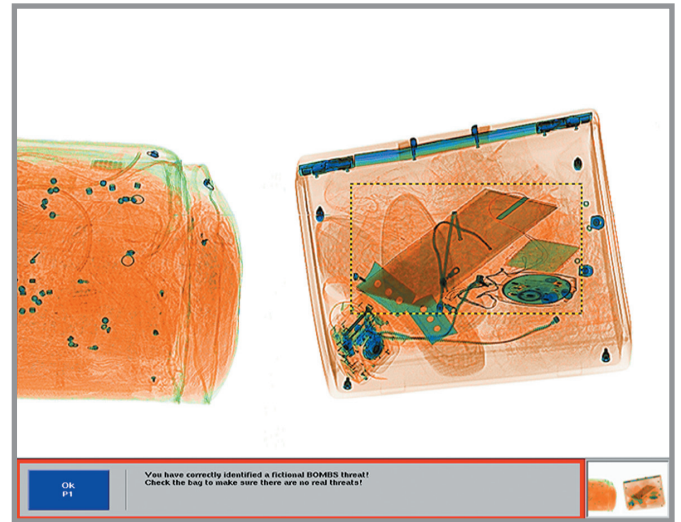
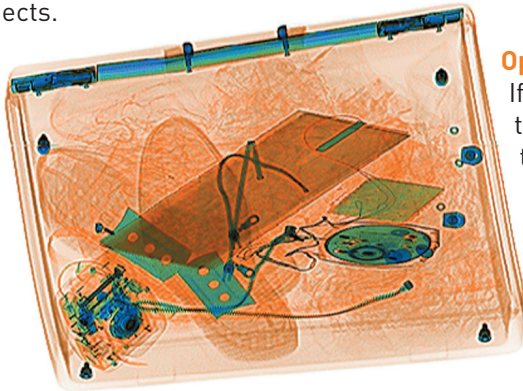
HI-TIP^{Plus}TM

THREAT IMAGE PROJECTION HEIMANN X-RAY INSPECTION SYSTEMS

Introduction

By means of **HI-TIP**, complete X-ray images of fictional baggage items containing threat objects are automatically projected between the images of real baggage items as well as single threat objects of different kind are automatically projected into real X-ray images of scanned baggage.

The operator of the X-ray system does not notice the projection process. During this procedure the full range of image enhancement functions to support the evaluation process is still available. Even automated operator support functions can be used in combination with **HI-TIP**. The task of the operator is to detect and mark dangerous or suspect objects.



Bag marked by the operator



Operation

If a suspect object has been detected and marked by the operator, the conveyor is stopped automatically. The fictional threat object is now displayed with a black/yellow frame.

The fictional disappears from the screen for further evaluation of the real baggage.

Moreover, user with supervisor access level can specify:

From which categories and at which percentage in proportion to the other categories combined threat images and single threat objects are projected during the normal operational flow. uWhich images from a category are to be projected.

System Configuration

The HI-TIP system provides a library divided into categories and subcategories containing combined complete threat images and images of individual threat objects. The supervisor can add, edit and delete categories.

Missed Objects

If the operator has missed an object projected on the image, the conveyor will be stopped and a message will be displayed on the screen. The real X-ray images together with the missed threat objects are automatically stored.

The images can be recalled using the **IMS** (Image Store System).

The **HI-TIP** system provides a library divided into categories and subcategories containing combined complete threat images and images of individual threat objects. The supervisor can add, edit and delete categories. Moreover, user with supervisor access level can specify:

- The diversification of projections
around the number of real bags.

```

Report 3
=====
REPORT          :  SCREENER PERFORMANCE COMPARISONS
REPORT DATE    :  05/1998 to 05/1999
UNIT TYPE     :  HI-SCAN 6040-A
SERIAL NUMBER  :  12345

=====
NAME  LOGIN ID  #Shifts  Time On  LOCATION  SUBSITE  #BNGs  #TIPS  Nh  Nfa  Nu  Pd  Pfa  d'  Response time (sec)
                        (minutes)
SERVICE  004    66      526769
LEVEL 4 US 104    16      246
OPERATOR  001    11      45
LEVEL 3 US 105    7       15

=====
TOTALS      96      527076      418  76  16  8  60
AVERAGES    24.00    131769.00    104.50  19.00  4.00  2.00  15.00  0.21  0.33    -0.32  4.00  39  1950

=====

```

From reports assigned to the individual users, higher level users can read how many times projected objects and images have been detected and how many of them have been missed. Conclusions as to the efficiency of the security checks with regard to different users and different workload can be drawn.


Category	Directory	Selecting percentage
GUNS	guns	25%
BOMBS	bombs	25%
CONV.EXPL.	bombs/CE	0%
INBL.EXPL.DEV.	bombs/ED	25%
KNIF.THREATS	bombs/KMC	0%
KNIVES	knives	25%
OTHER/MISC.	other	0%
HAZARD.MAT.	hazardous_materials	0%
CONV.THREAT.MA.	CTI	25%
BOMBS	CTBombs	25%
GUNS	CTGuns	0%
HAZARD.MAT.	CTIhazardous_materials	0%
KNIVES	CTIknives	0%
OTHER/MISC.	CTIother	0%

Buttons: OK, Cancel, F2, F3, New, Edit, Delete, IMS menu

HI-TIP Threat Image Projection

- Organize categories
- Projection frequency
- Location menu
- Decision time settings
- Reports & data download
- Display object markings: off
- HI-TIP: off

Ok P1 Cancel P2 P3



Projection frequency

Bags per projection (bag ratio) [2...9999]: 25

Diversification range (bag range) [0...50%]: 25

Random projections (random ratio) [0...50%]: 25

OK P1 Cancel P2 P3

Decision time settings

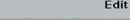
Decision time - threat objects [1...10 sec]: 3

Additional decision time - threat objects [0...45 sec]: 10

Decision time - combined images [1...10 sec]: 3

Additional decision time - combined images [0...45 sec]: 10

OK P1 Cancel P2 -- P3 P3



```
Report 2
```

```
REPORT      : INDIVIDUAL Screener PERFORMANCE
REPORT DATE : 01/09/1998 to 28/03/1999
NAME        : LEVEL 4 USER
ID#         : 104
COMPANY/AUTHORITY:
UNIT TYPE   : HI-SCAN 6040-A
SERIAL NUMBER : 12345
```

```
DATE      LOCATION  SUBSITE  #BAGs  #Tps  Nt  Nfa  Na  Pd  Pfa  d'      Response time (sec)
Hit      False
=====
26/01/1999      198      7      0      2      7      0.00      1.00      -4.65      0      6
52      27      4      1      23      0.15      0.20      -0.29      3      4
=====
TOTALS      238      34      4      3      20
AVERAGES      119.00      17.00      2.00      1.50      15.00      0.12      0.43      -1.03      3.00      5.00
```

```
Report 1
```

```
REPORT      : Screener DAILY LOG
REPORT DATE : 01/08/1998 to 01/11/1999
UNIT TYPE   : HI-SCAN 6040-A
SERIAL NUMBER : 12345
COMPANY/
```

Report							
REPORT		: SCREENER DAILY LOG					
REPORT DATE		: 01/08/1998 to 01/11/1999					
UNIT TYPE		: HI-SCAN 6040-A					
SERIAL NUMBER		: 12345					
DATE	NAME	LOGIN ID	COMPANY/ AUTHORITY	LOCATION	SUBSITE	LOGIN	LOGOUT
20/01/1999	LEVEL 1	US 101				15:44	15:45
20/01/1999	SERVICE	004	HEINRICH SY			15:45	15:52
20/01/1999	SERVICE	004	HEINRICH SY			15:52	15:57
20/01/1999	SERVICE	004	HEINRICH SY			15:57	15:58
20/01/1999	LEVEL 1	US 101				15:58	15:59
20/01/1999	SERVICE	004	HEINRICH SY			15:59	16:01
20/01/1999	LEVEL 1	US 101				16:01	16:02
20/01/1999	SERVICE	004	HEINRICH SY			16:02	16:04
20/01/1999	LEVEL 1	US 101				16:04	16:05
20/01/1999	SERVICE	004	HEINRICH SY			16:05	16:07
20/01/1999	SERVICE	004	HEINRICH SY			16:07	16:08
20/01/1999	SERVICE	004	HEINRICH SY			16:08	16:11
20/01/1999	SERVICE	004	HEINRICH SY			16:11	16:15
20/01/1999	LEVEL 1	US 101				16:14	16:35
20/01/1999	SERVICE	004	HEINRICH SY			16:35	16:36
20/01/1999	LEVEL 1	US 101				16:36	16:37
20/01/1999	SERVICE	004	HEINRICH SY			16:37	16:50
20/01/1999	SERVICE	004	HEINRICH SY			17:03	17:02
20/01/1999	SERVICE	004	HEINRICH SY			17:02	17:03
20/01/1999	SERVICE	004	HEINRICH SY			17:07	17:07

Report 4

REPORT

THREAT DETECTION BY CATEGORY

REPORT DATE

09/1990 to 10/3/1999

UNIT TYPE

HI-SCAN 6040-A

SERIAL NUMBER

12345

Back

Next

DATE	TIME	NAME	LOGIN ID	LOCATION	SUBSITE	CATEGORY	DOCKED
20/01/1999	16:04	SERVICE	004			SOUSSWAFEN	---
20/01/1999	16:17	SERVICE	004			SOUSSWAFEN	---
21/01/1999	11:33	SERVICE	004			SOUSSWAFEN	---
21/01/1999	11:44	SERVICE	004			SOUSSWAFEN	---
21/01/1999	11:46	SERVICE	004			SOUSSWAFEN	---
21/01/1999	11:48	SERVICE	004			SOUSSWAFEN	---
21/01/1999	11:49	SERVICE	004			SOUSSWAFEN	---
21/01/1999	11:50	SERVICE	004			SOUSSWAFEN	---
21/01/1999	12:13	SERVICE	004			SOUSSWAFEN	---
21/01/1999	12:20	SERVICE	004			SOUSSWAFEN	---
21/01/1999	12:26	SERVICE	004			SOUSSWAFEN	---
21/01/1999	12:27	SERVICE	004			SOUSSWAFEN	---
21/01/1999	12:28	SERVICE	004			SOUSSWAFEN	---
21/01/1999	12:29	SERVICE	004			SOUSSWAFEN	---
21/01/1999	12:33	SERVICE	004			SOUSSWAFEN	---

```

Report 3
=====
REPORT : SREENER PERFORMANCE COMPARISONS
REPORT DATE : 09/1990 to 03/1993
UNIT TYPE : HI-SCAN 6040-A
SERIAL NUMBER : 12345

=====
NAME LOGIN ID #Shifts Time On LOCATION SUBSITE #BKGs #TIPs Nn Nfa Na Pd Pfa d' Response time (sec)
                               (minutes)                               Hit False
=====
SERVICE 004 66 526769 162 39 11 5 28 0.28 0.31 -0.15 5 34
LEVEL 4 US 104 16 246 238 34 4 3 30 0.12 0.45 -1.03 3 5
OPERATOR 001 11 45 9 3 1 0 2 0.33 0.00 1.51 4 0
LEVEL 3 US 103 5 9 9 0 0 0 0 0.00 0.00 0.00 0 0
=====
TOTALS 96 527076 418 76 16 8 60 0.21 0.33 -0.32 12 39
AVERAGES 24.00 131769.00 104.50 19.00 4.00 2.00 15.00 0.21 0.33 -0.32 12 39
=====

```

Smiths Heimann GmbH, Im Herzen 4, 65205 Wiesbaden, Germany
Modifications reserved. 95584775 20/01/2011 © Smiths Detection Group Ltd. - In some cases, the figures contain options
HI-TIP is a trademark of Smiths Detection Group Ltd.