

HI-SCAN 6040C – Sales Presentation

smiths detection
bringing technology to life



Topics

> Introduction

> Typical Applications

> Key Features - Benefits

> Standard Configuration and Options

> Technical differences HI-SCAN 6040i vs. HI-SCAN 6040C

> The Competition

> User Benefits At-a-Glance

Introduction

- New conventional X-ray system for security checkpoint screening in public buildings
- Successor of HI-SCAN 6040i, the most successful X-ray system worldwide
- New HiTraX 3 electronics & software platform to offer customers future upgrades
- Improved performance, image quality and new software features
- First system of Smiths Detection's Next Generation Conventional Checkpoint Range



HI-SCAN 6040C
(C = Compact)

HS 6040C is for basic screening applications
(no options for integration)

Typical Applications

HI-SCAN 6040C is the ideal system for screening of bags, packages and other objects at Security Checkpoints in Public buildings such as:

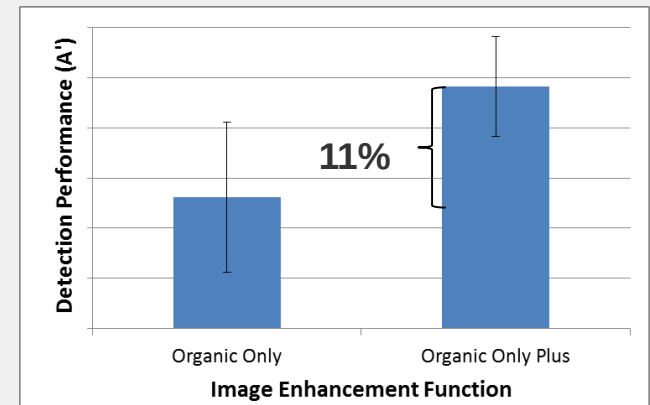
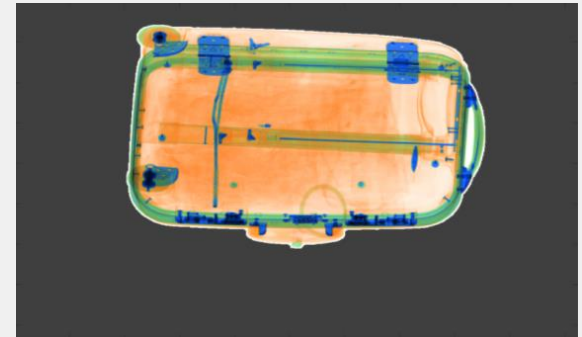
- Prisons
- Government buildings
- Embassies
- Courthouses
- Hotels with 4 or more stars
- Banks



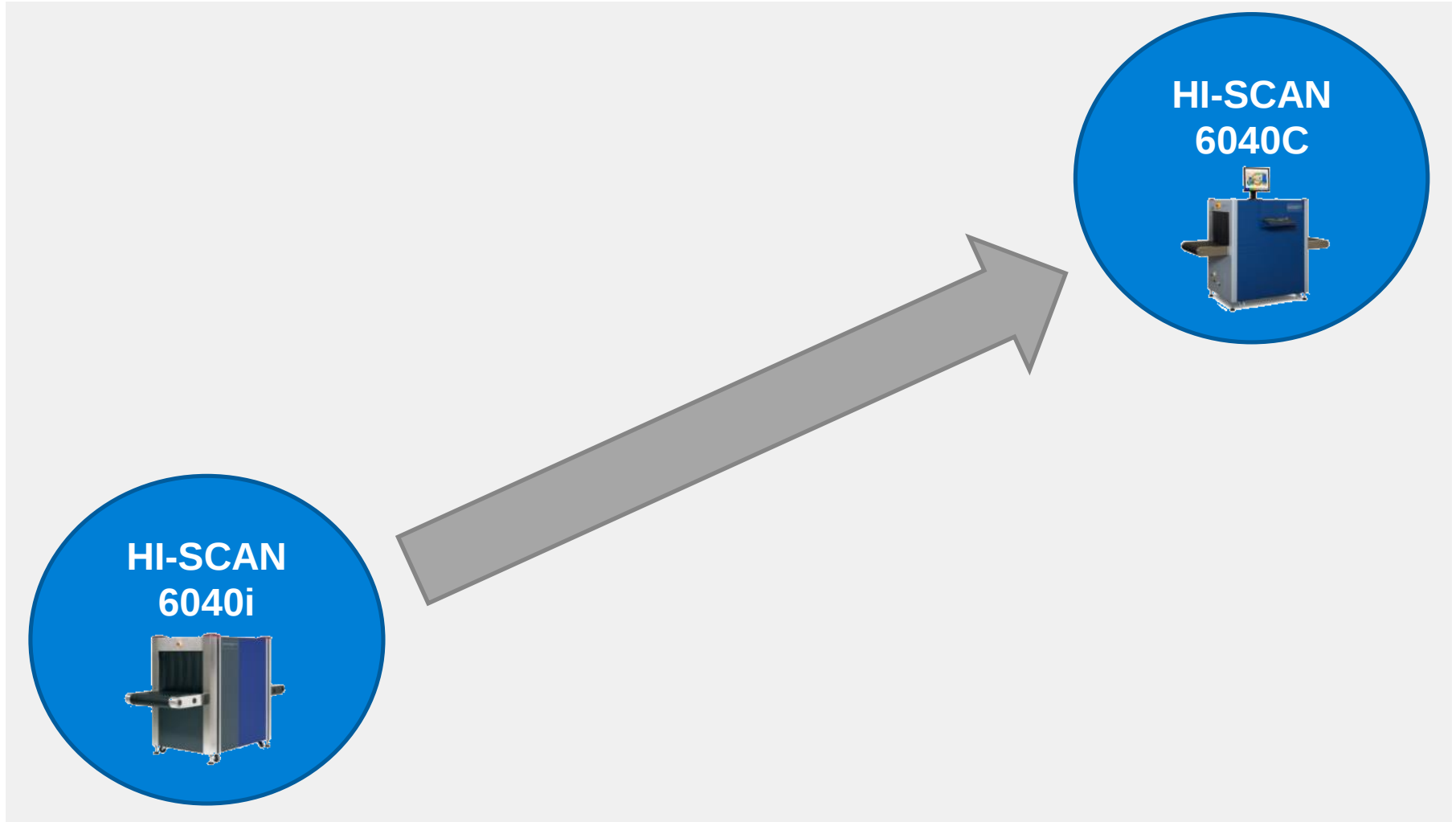
HI-SCAN 6040C - Developed from a user perspective

Evolution HI-SCAN 6040i to HI-SCAN 6040C:

- Improved image quality for best-in-class makes the identification of threats simple
- Optimized background contrast for enhanced recognisability of objects (patented)
- Smart image display functions for increased threat recognition of up to 11% (proven by CASRA)
- Simplified fault finding for reduced system downtimes
- Future-proof electronics & software, upgradable to future requirements



HI-SCAN 6040C offers increased image quality

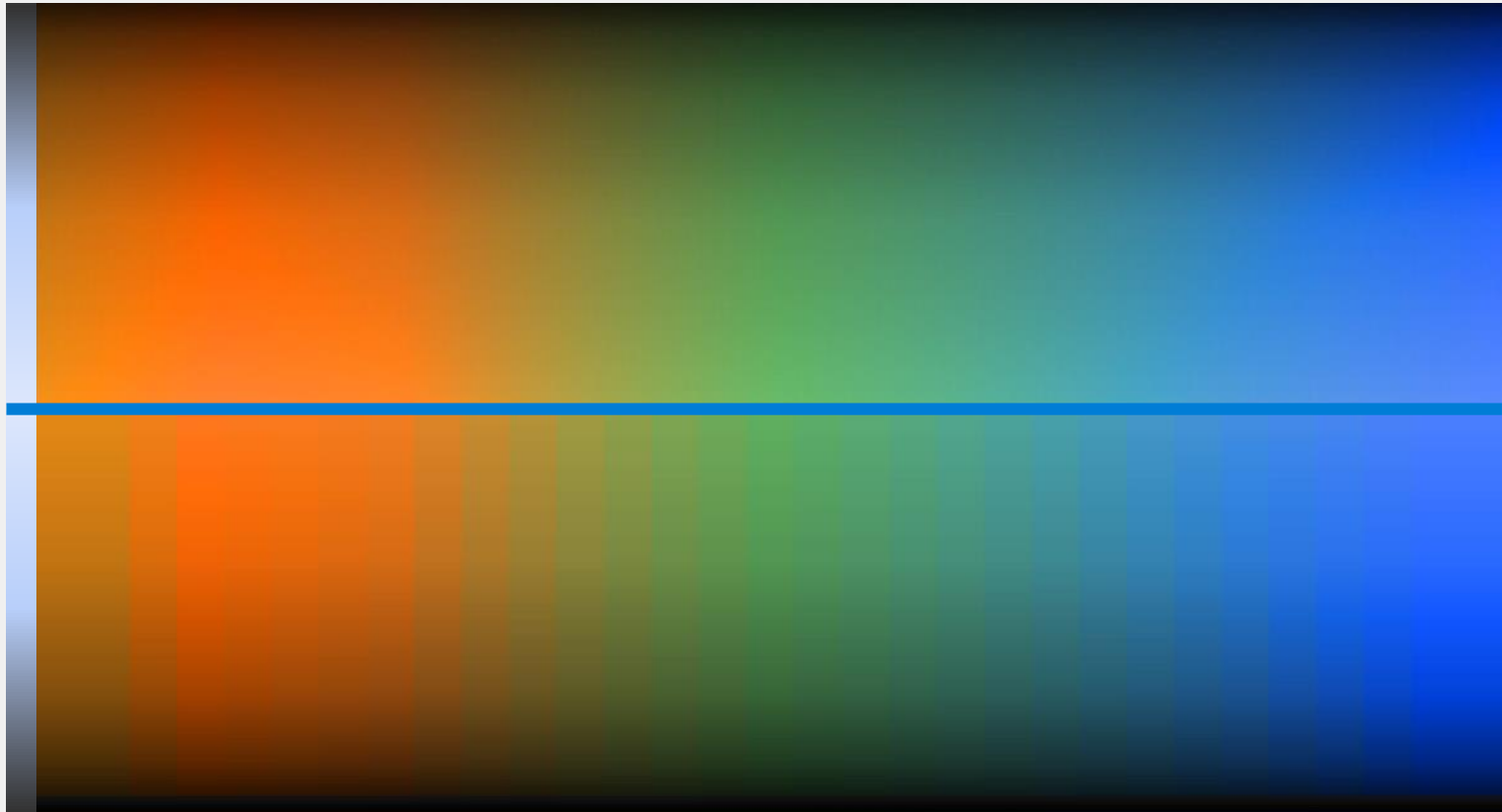


Higher technical performance for increased image quality

	HI-SCAN 6040i 	HI-SCAN 6040C 
Detectors	LM16 HI-MAT 2	LM16 HI-MAT 2
X-ray Anode voltage (operated)	140kV	160kV
HiTraX Electronics platform	HiTraX II	HiTraX 3
Imaging Performance		
SD QM Test chart (wire resolution std/typ)	AWG 39/40	AWG 39/40
SD QM Test chart (steel penetration std/typ)	30/31 mm	35/37 mm
ASTM 792-01, Test 4 (Steel penetration typ)	26 mm	30 mm
ASTM 792-01, Test 3 (Spatial resolution typ)	1.6 mm vertical 1.3 mm horizontal	1.0 mm vertical 1.0 mm horizontal
SD R&D Test chart (spatial resolution typ)	n/a	1.0 mm vertical 0.5 mm horizontal

More colors for better image representation

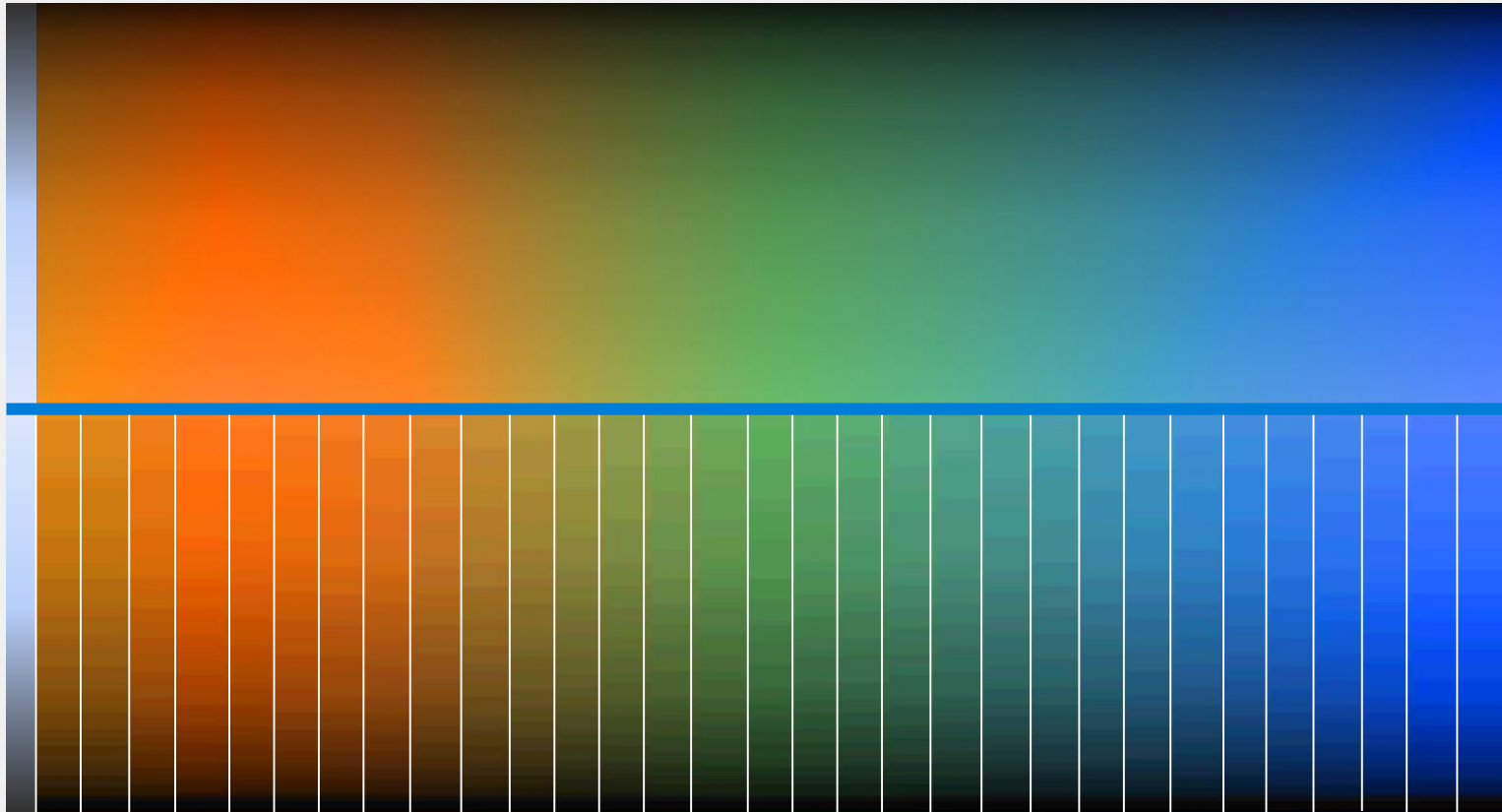
- HI-SCAN 6040C (HiTraX 3 electronics platform) = 256 colors in various shades



- HI-SCAN 6040i (HiTraX II electronics platform) = 32 colors in various shades

More colors for better image representation

- HI-SCAN 6040C (HiTraX 3 electronics platform) = 256 colors in various shades



- HI-SCAN 6040i (HiTraX II electronics platform) = 32 colors in various shades (dramatization)

Digital Video Interface for crisper images

- The digital video interface (DisplayPort) of the HiTraX 3 electronics platform in the HI-SCAN 6040C provides crisper images than the analog VGA interface of the HI-SCAN 6040i

HI-SCAN 6040C



Digital Video Signal

HI-SCAN 6040i



Analog Video Signal

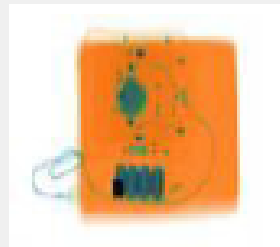
New Smart Image Display Modes

- Increased detection of threat items by Operators in Critical Infrastructure with new Smart Image Display Modes
 - Organic Stripping Plus
 - Organic Only Plus
 - Organic Enhancement

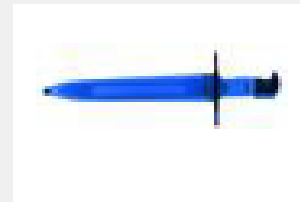
Threat Items



Guns



IEDs



Knives



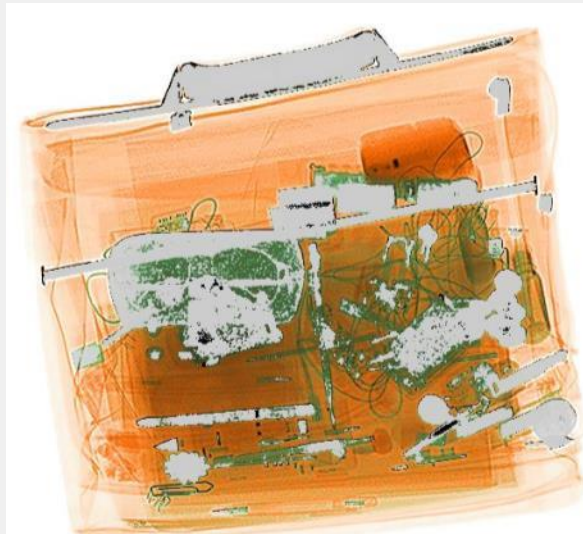
Others

New Smart Image Display Modes

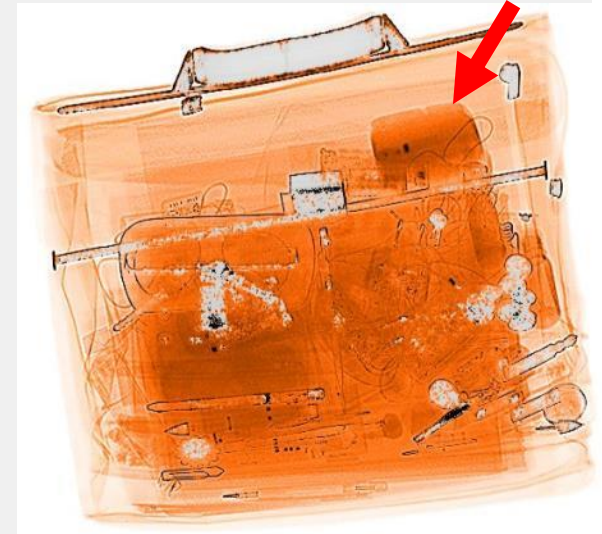
- **Organic Only Plus** highlights organic content and might virtually reduce superposition



HI-MAT Plus



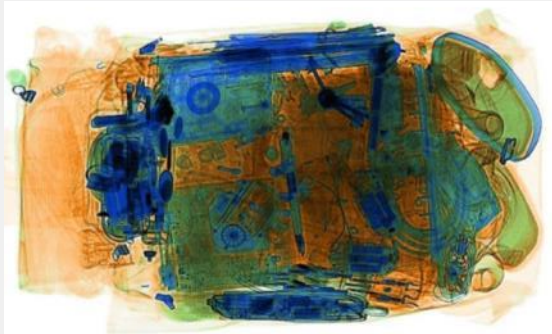
Organic Only



Organic Only Plus
(virtually reduces superposition)

New Smart Image Display Modes

- New Image Display modes might virtually reduce bag complexity



HI-MAT Plus



Organic Only Plus



Organic Stripping Plus

- New Image Display Modes might virtually increase visibility of objects



HI-MAT Plus



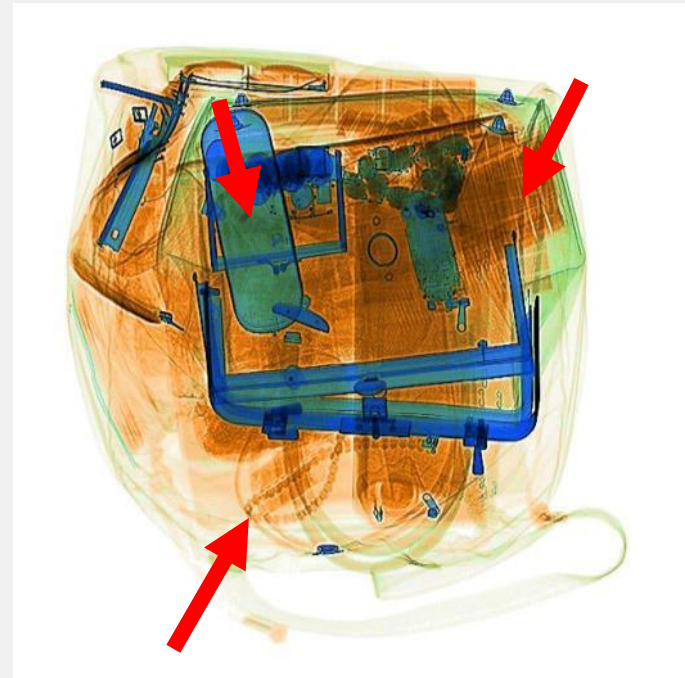
Organic Only Plus

New Smart Image Display Modes

- Organic Enhancement increases contrast and visual attention of organic parts in the image



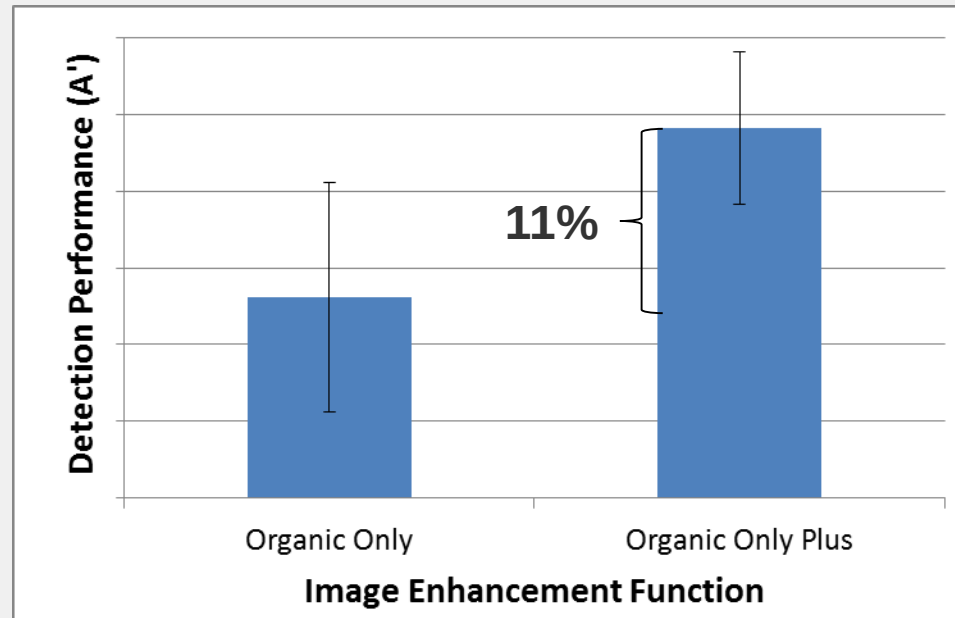
HI-MAT Plus



Organic Enhancement

New Smart Image Display Modes increase detection of threats

- A study conducted by the independent research institution CASRA/University of Applied Sciences and Arts, Northwestern Switzerland found a significant increase of detection performance up to 11% for specific threat categories when the new image enhancement functions were available

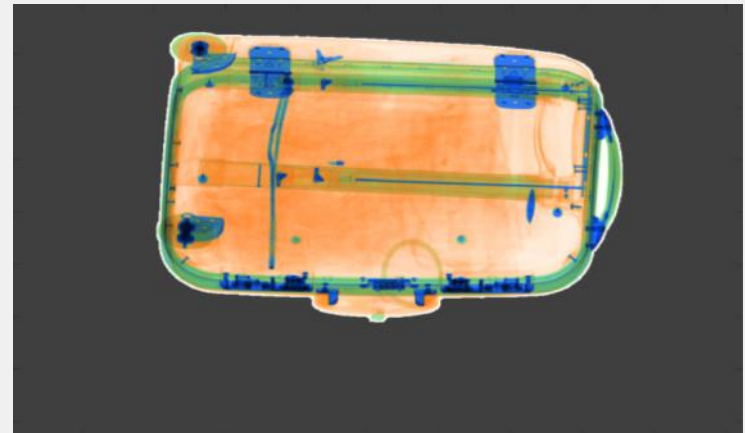


New Optimized Background Contrast Tool

- Used since 100 years in Medical X-ray Technology
- Better recognition of image details and contrast
- Promotes concentration and attention of Operators
- US Patent awarded
- Enhances detection and identification of low density threat items



Standard Background



Optimized Background Contrast

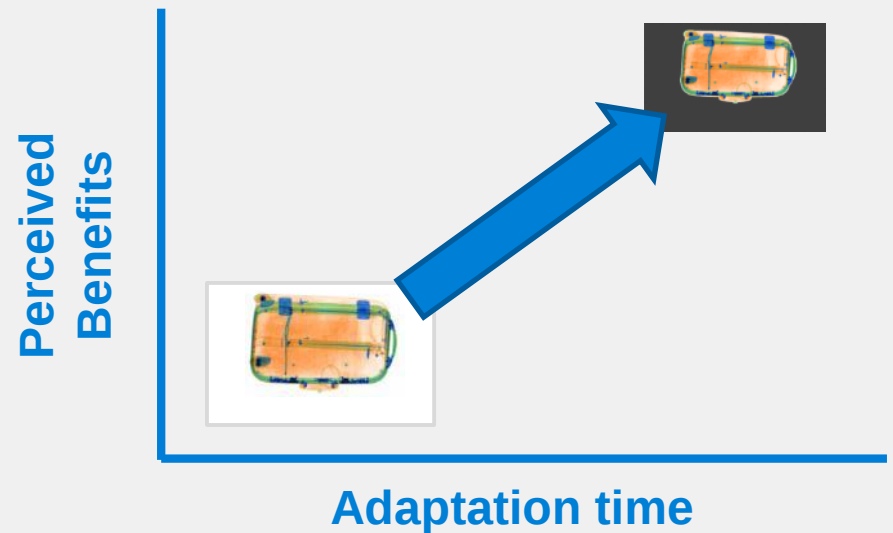
New Optimized Background Contrast Tool

- Better recognition of details and contrast with dark background



New Optimized Background Contrast Tool

- The contrast on the X-ray image has been **endorsed by psychology experts** from the independent research institution CASRA/University of Applied Sciences and Arts, Switzerland, for its positive effects on image recognition
- In the study screeners reported “**comfort for the eyes**” and “**better contrast**” with Optimized Background Contrast
- Results indicate that screeners need some time to adapt until benefits of the new tool are fully perceived



Smart System Monitoring features reduce system downtimes

➤ Smart System Monitoring Features:

- Power-On Self-Test
- Real-time Background Diagnosis
- Real-time System Feedback



- ## ➤ Issues are presented with a clear error message that guides the Operator / Supervisor / Technician. **This expedites maintenance and service and reduces system downtimes**

Smart System Monitoring features expedite maintenance and service

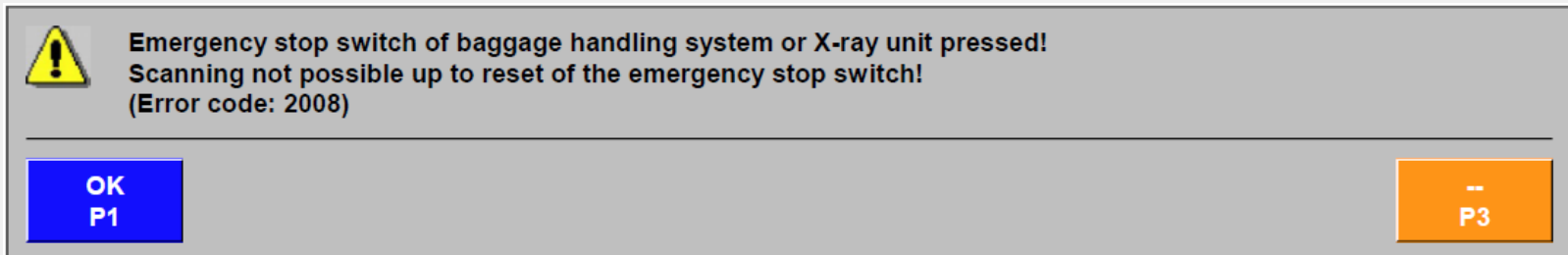
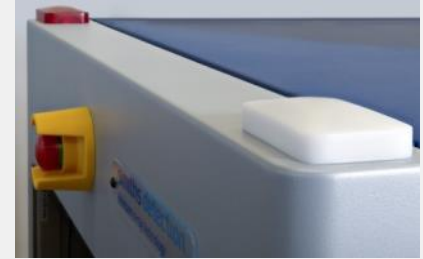
Example: New Emergency-Stop Behaviour

HI-SCAN 6040i (HiTraX II electronics platform)

- Machine shut down completely and had to be rebooted manually

HI-SCAN 6040C (HiTraX 3 electronics platform)

- Electronics and monitor stay activated and no shut down takes place
- Ensures machine to be back in operation in a matter of seconds**



New Emergency-Stop behavior and protective collar

- Protective collar avoids unnecessary service calls and system downtime (Patent)



Smart System Monitoring features expedite maintenance and service

Example: Motor overheated

HI-SCAN 6040i (HiTraX II electronics platform)

- Machine shuts down completely without notice
- Restart possible after the motor has cooled down



HI-SCAN 6040C (HiTraX 3 electronics platform)

- Presents a clear error message that guides the Operator / Supervisor / Technician



Option: Extended Image Storage

The hard drive within the unit can be upgraded in the field to a larger storage capacity, capable of storing 500,000 X-ray images

Note: Software Option Extended Image Storage needs to be activated

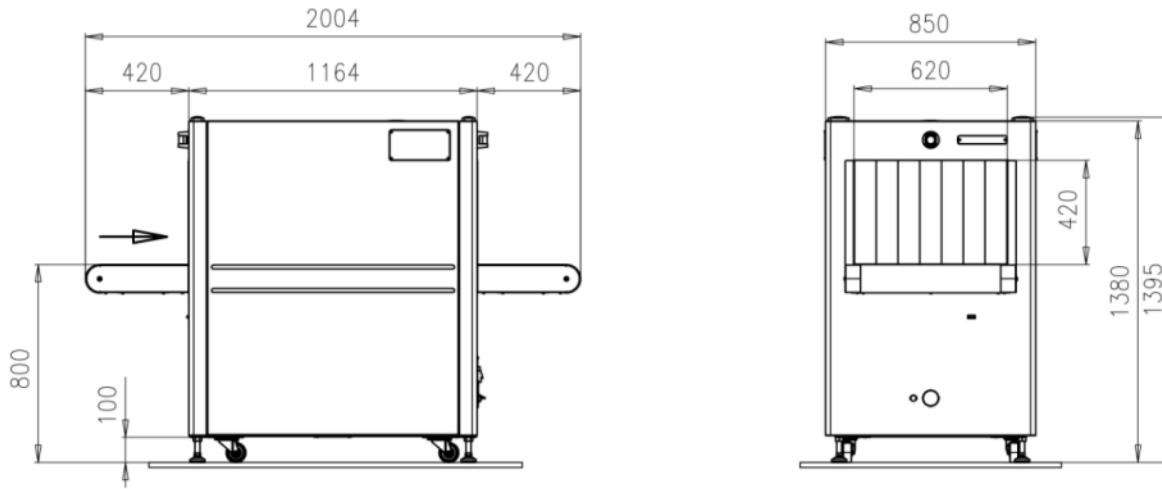


Future proof investment for customers

- **HiTraX 3 was designed from the ground up to be forward looking**
- The current HiTraX II will not be developed further with regard to new customer benefits or interfaces
- **Only customers who have HiTraX 3 electronics in their units can profit and benefit from upcoming software upgrades and features**



Dimensions & Footprint



Height: 1395 mm

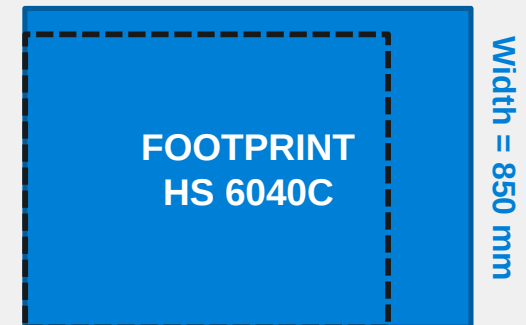
Width: 850 mm

Length: 2000 mm

Comparison to HI-SCAN 6040i and 6040ds

- HS 6040C approx. 10 cm higher than HS 6040i
- HS 6040C approx. 30 cm longer than HS 6040ds
- HS 6040C approx. 5 cm wider than HS 6040ds

Length = 2004 mm



----- HI-SCAN 6040ds
(to be discontinued end
of March 2016)

HI-SCAN 6040C – Technical differences to HI-SCAN 6040i

- New Mechanics
- New HiTraX 3 electronics platform
- Conveyor height 800mm
- Standard detector material (HIMAT2 humidity protected) no options (e.g. XADA)
- Only 1 monitor supported (DisplayPort vs. VGA)
- Only 1 conveyor length available (2000 mm)
- Single colour only (silver matt / blue)
- No use of frequency converter (50Hz =0.2m/s; 60Hz=0.24m/s)
- 4 Input or Output rollers only (Length: 500mm, 1000mm ,1500mm , 2000mm)
- No support of iLoc consoles
- No support of Recheck
- No support of motorized in- or output conveyors
- Xport discontinued – no Online Export via USB, alternatively selection of X-ray images and „Offline“ export to USB
- Xtrain Software Option renamed „Smiths Detection Training System“ (SDTS)
- No RIDA Option – Extended image storage capability of 500,000 images with additional HDD
- Two interlock switches standard
- X-ray dosage <1 μ Sv/h (Lead curtains PB=0.35)

HI-SCAN 6040C – Standard Configurations

- 1 standard TFT monitor 19" (incl. Display Port)
- Standard HiTraX 3 Keyboard
- Internal Connection Cable for Monitor/Keyboard on top
- Unit colour anthracite silver / blue
- Network socket on unit
- 3.0 USB interface on unit
- Humidity protected detectors HI-MAT2
- **Input voltage 220V – 240V -15% / +10%, 50/60Hz +/- 3Hz**
- **Input voltage 110V-120V -15% / +10%, 50/60Hz +/-3Hz (incl. Transformer)**
- Software features: High Density Alert (HDA), HI-SPOT, IMS (Image Management System) 20,000 images, OptiZoom, SUPER-ENHANCEMENT, X-PLORE, Printer
- 2x PowerOn Lamps White
- Two Interlock Switches
- Conveyor length 2m
- External X-ray dosage <1µSv/h (Lead curtains PB=0.35)
- Menu language English
- **Full Reverse Mode**
- Note: No power cable included! (has to be selected via Mini-Selector)

HI-SCAN 6040C

Standard Configurations:

- 1) **EMEA-APAC Standard**
Part number: 11131316
- 2) **Americas Standard**
Part number: 11131317



HI-SCAN 6040C – Standard Options

- Full Reverse Mode Kit
- PowerOn Lamp Kit Green (for STAC)
- Keyboard Holder
- Tunnel extensions (420mm, Macrolon)
- Roller tables 1m (Plastic, end-stop, no side guard)
- External Connection cable 10m to Operator Desk
- Software Options: X-ACT, HI-TIP Plus, SDTS (Smiths Detection Training System), Extended Image Storage (500,000 images)
- TIP Library 1000 Images (USB-Stick)
- Calibration Body for X-ACT
- Calibration Sheet
- Operating Manual (DE, EN, FR or SP; Printed or CD-ROM)
- Technical Manual on DVD (Language DE, EN, FR, SP)

Standard Options have short lead times* (on-stock)

*once Operations ramp-up finalized

HI-SCAN 6040C – Standard Options

Power cable 5m for unit		Plugs: Schuko, SEV, UK, US, AUS
Full Reverse Mode Kit		Retrofit time approx. 1 Man hour <u>Content:</u> Transmitter, Receiver, cabling, installation material <u>[Note:</u> exemplary image]
PowerOn Lamp Kit Green		Required for STAC <u>Content:</u> 2 green lamp glasses, ionizing radiation labels, cleaning cloth
Keyboard Holder		For ergonomic working posture
Tunnel extensions (420mm, Macrolon)		
Roller tables 1m (Plastic, end-stop, no side guard)		

HI-SCAN 6040C – Standard Options

External Connection cable 10m to Customer Desk		Change from internal to external connection cable approx. 20 min [Note: exemplary image]
Extended Image Storage 500,000 (HDD)		Retro-fit time approx. 5 min [Note: exemplary image] Requires Software Option Extended Image Storage
Software Options	X-ACT	Activation with dongle-code on site
	HI-TIP Plus*	Activation with dongle-code on site
	SDTS* (Smiths Detection Training System)	Activation with dongle-code on site
	Extended Image Storage	Activation with dongle-code on site
TIP Library 1000 Images*		[Note: exemplary image] Required for HI-TIP Plus and SDTS
Calibration Body for X-ACT		required for monthly calibration of the material detection (X-ACT)
Calibration Sheet		Service Tool required for installation and maintenance work

HI-SCAN 6040C – Non-Standard Options

- Heavy Duty Roller Castors
- Monitor Theft Protection (Kensington Lock)
- Various Test Bags / Cases (ASTM, ECAC EWSTP, ...)
- Input/Output Rollers – Length 500mm, 1500mm, 2000mm
- Uninterruptible Power Supply (UPS) - external

Non-Standard Options have longer delivery times (non-stock options)

Can HI-SCAN 6040i be easily swapped with HI-SCAN 6040C at a Checkpoint?



ReCheck



HiTraX 3 (!) Keyboard*
SD Qualified Monitor with
Display Port



Motorized Conveyor
Input/Output



Passive Rollers
Input/Output
(adjust to conveyor height
800mm)



Barcode Reader



HI-SCAN 6040C



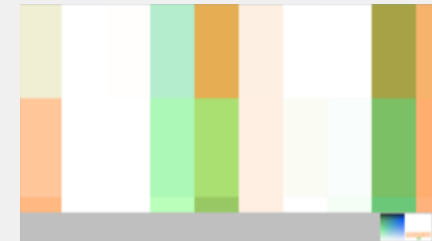
iLoc Operator Console

-2 + 256 Zoom factor - It is to bug competition and have a lock-out spec!

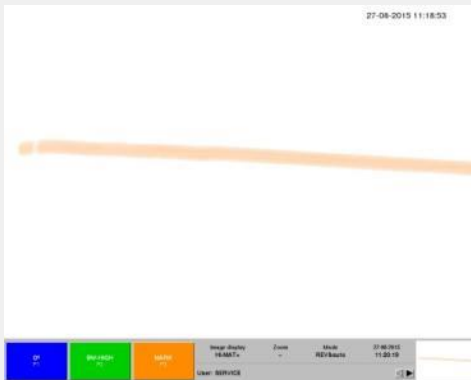
Competition started to play „the bigger, the better“ game in tenders.

Positive 256x Zoom -> “pixel blocks image”

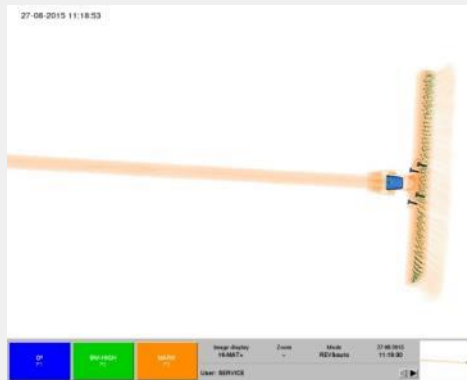
It makes no sense!



Negative 2x Zoom helps to make long objects fit screen size



1st screen shot



2nd screen shot



- 2x zoomed

New Service Login Procedure – Work in progress

Access Service Level HiTraX 3 Electronics Platform

The service switch implemented on the PI board of the HiTraX II platform, that generally enables/disables access to the service level, is removed and replaced by a USB-key to identify the service technician.

Each “service-token” has a unique identifier that is logged by the software each time it is used to gain access to the HiTraX software. This allows tracking of each service person who works on an X-ray unit.

Monitors provided by Customer / Sales Partner

The standard configuration of the HI-SCAN 6040C includes a standard 19" TFT monitor. 23" 16:9 TFT monitor is an option.

If customers want to provide their own Monitor:

- 1.)** Monitors need to be qualified by Smiths Detection Quality Management to ensure electrical safety and appropriate image quality.
- 2.)** Measurement of leakage current by Field Service Technician according to the specifications described in the Technical Manual and return of Installation protocol to Smiths Detection Service.

Attention: In case these above guidelines are not followed, the customer or Sales Partner is liable for any damage caused by electrical accident with non-qualified Smiths Detection Monitor.

TOP 3 Competitors

Manufacturer	SMITHS HEIMANN	Astrophysics	L-3	RAPISCAN
	 HI-SCAN 6040C	 XIS 6545	 ProScan 6.4c	 Rapiscan 620XR
Tunnel dimension (WxH) [mm]	620x420	651x454	620x430	620x420
Total dimensions (LxWxH) [mm]	2004 x 850 x1395	2164 x 873 x 1316	2087 x 867 x 1318 (medium conveyor)	2082 x 840 x 1380
Conveyor height (mm)	800	730	765 to 795	800
Unit weight (approx.)	approx. 460kg	515kg	483kg (unpacked)	512 kg
max. conveyor load (ev. Distrib)	165kg	165kg	127kg (165kg option)	165 kg
X-ray Anode voltage (operated)	160kV	150kV (180kV Option)	150kV	160kV (High Penetration Option)
Steel Penetration (Std/Typ)*	35 / 37 mm	37 / 39 mm	41 / 42 mm	35 / 40 mm
Wire Resolution (Std/Typ)*	39 / 40 AWG	38/40 AWG	43 / 44 AWG	38 / 40 AWG
Spatial resolution ASTM Test 3 (horizontal / vertical)	1 mm	1 mm	n.i.	n.i.
Steel penetration ASTM Test 4	30 mm	26 mm	n.i.	n.i.
Wire resolution ASTM Test 1	36 AWG	36 AWG	n.i.	n.i.

Critical Infrastructure Market is a “Me-too Market”

.... Many small players offering similar technical performance



Offer your customers real benefits and stand out
through brand reputation!

Differentiation through Smiths Detection Brand reputation

What Smiths Detection stands for:

- More than 40 years of X-ray experience
- Best-in-class image quality
- Proven Product Reliability
- High quality system components
- Global Sales & Service Footprint

“HI-SCAN 6040C

Trust the experts –

keep threats out and people safe with

airport quality from Smiths Detection”

smiths detection

HI-SCAN 6040C
trust the experts: keep threats out and people safe with airport quality screening from Smiths Detection

Every day, operators of public buildings need to maximize security to safeguard staff and visitors. The most up to date technologies and products are required to keep pace with ever evolving potential risks and threats.

The latest X-ray scanner from Smiths Detection is an ideal system to secure entrance areas and screen incoming parcels to make your building a safer place. With its advanced features, the HI-SCAN 6040C stands for high reliability and ease-of-use for operators.

The new HI-SCAN 6040C makes YOUR life easier AND keeps the people in YOUR building safe. The new HI-SCAN 6040C makes YOUR life easier AND keeps the people in YOUR building safe.

THE NEW HI-SCAN 6040C EXPLAINED

The HI-SCAN 6040C generates highly detailed, easily interpreted X-ray images, a strength for which Smiths Detection is well known around the world. The high image quality makes the identification of potential threats simple, while minimising errors.

Rapid and reliable detection of dangerous and prohibited items is essential for security checks in public buildings. For this purpose the system provides intelligent image display functions which support the operator in distinguishing both organic materials such as explosives and narcotics, and inorganic materials such as weapons and money on the screen.

Premiering with a new Optimised Background Contrast function, the recognisability of objects on the screen is enhanced significantly.

INTELLIGENT IMAGE DISPLAY FUNCTIONS FOR RAPID AND RELIABLE DISTINCTION OF ORGANIC AND INORGANIC THREATS:

- Organic Only Plus
- Organic Stripping Plus
- Organic Enhancement

WHAT SMITHS DETECTION STANDS FOR:

- More than 40 years of X-ray experience
- Best-in-class image quality
- Proven product reliability
- Airport tested and accepted
- Global sales & service footprint

Additional Offerings & Services

➤ Extension of Security Checkpoint

- Extension into complete security package with other Smiths Detection technologies such as for people screening or trace detection



➤ MSA SmartTech Support Screening Service

- Remote and real-time X-ray Image Analysis support by MSA Experts
- Provides instant access to experienced certified bomb technicians
- Availability 24x7 365 days



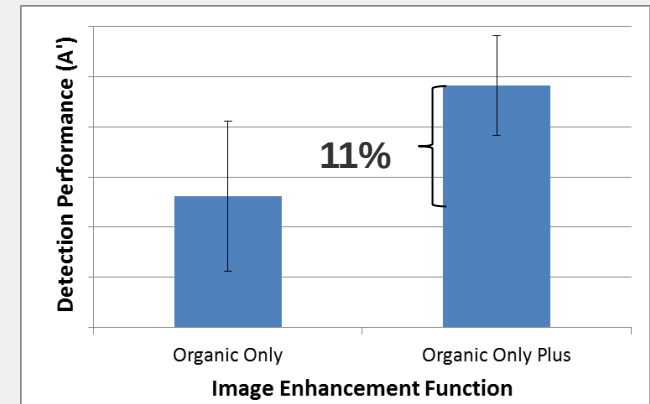
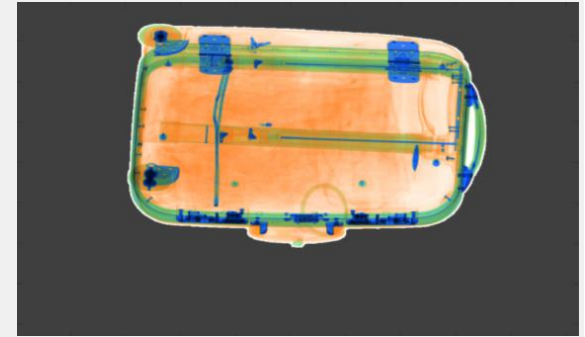
➤ STI Security – Operator Training / X-ray image interpretation

- Online Operator Training
- On-site Classroom-Training



Summary of User Benefits

- Ease of use for operators
- High reliability
- Best-in-class image quality makes the identification of threats simple
- Optimized background contrast for enhanced recognisability of objects (patented)
- Smart image display functions for increased threat recognition of up to 11% (proven by CASRA)
- Simplified fault finding tools for reduced system downtimes
- Future-proof electronics & software, upgradable to future requirements



smiths detection

bringing technology to life



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