IBDOCIED AI X-Ray Software IED Detection Standard

Scope:

The following are the requirements for AI x-ray detection software to be certified for IED threat detection. The system must be able to detect all the below listed IED threats to be certified by IBDOCIED for IED detection.

A scoring sheet is provided to evaluate different AI manufacturers' ability to detect the IED threat. This scoring sheet can be used as a technical evaluation for tenders/solicitations.

Testing Requirements:

Testing to verify that the system can detect all of the different IED threats will be done using the following process:

A. **All the IED components will be verified as being detected by the system when they are clearly highlighted and marked as the specific IED category.**

B. **The items will be tested in a 15-liter sized backpack and have the following clutter in the bag:**

1. **QTY 1 Ream of copy paper (main compartment)**
2. **QTY 1 Three ring binder 1in (main compartment)**
3. **QTY 1 Laptop power cord (main compartment)**
4. **QTY 1 Bottle of water (main compartment)**
5. **QTY 1 USB cable with plug adapter (outside pocket)**
6. **QTY 1 Smart Phone charging cable (outside pocket)**

7. QTY 1 set of car keys (key fob with 3 metal keys) (outside pocket)

8. QTY 1 Altoids mints metal can (outside pocket)

9. QTY 1 Anti-perspirant (Internal pocket)

10. QTY 2 each quarter, dine, nickel, penny (outside pocket)

11. QTY 1 8oz lotion (main compartment)

12. QTY 4 Ink Pens (Pen holder)

13. QTY 1 Cliff Protein bar 11 grams (internal pocket)

14. QTY 1 Headphones wireless (main compartment)

15. QTY Hairbrush (Pocket)

The below listed IED threat items are what will be required for x-ray AI detection system to detect.

IED Threats:

1. Metal Pipe Bomb 2 in diameter with end caps
2. PVC Pipe Bomb 2 in diameter with end caps and filled with sugar
3. PVC Pipe Bomb 2 in diameter with end caps filled with salt
4. Metal pipe bomb elbow with end plugs
5. Hand Grenades:
   - F1 Fragmentation INERT Metal
   - M67/69 Inert metal with hole in bottom
   - M26 Inert metal with hole in bottom
   - Flashbang (M84) Inert metal
6. Metal Fragmentation:
   - Nails in a 4in x 4in square in line and side by side
   - Ball Bearings in a 4in x 4 in square side by side
   - Nuts in a 4in x 4 in square side by side
7. Detonators (IBDOCIED Approved X-ray correct):
   - Aluminium Bridge wire

- **Aluminium fuze head**
- **Copper Bridgewire**
- **Copper fuzehead**
- **Aluminium steel sleeve**
- **Copper steel sleeve**
- **Copper improvised**
- **E-match (can use live e-match)**
- **Nonelectrical detonator with 6 in of time/safety fuze**
- **Improvised detonator with e-match and aluminium shell**

IBDOCIED Approved x-ray Correct Detonators:

svscountermeasurestraining.com/collections/detonators

8. IED Circuit components:

- **Relay single channel circuit board 5-12 volt**
- **Relay solder type 12 volt**
- **Relay single channel receiver 12 volt**
- **MOSFETT/SCR**
- **Toggle switch large with wires**
- **Toggle switch small with wires**
- **Slide switch medium with wires**
- **Rocker switch with wires**
- **Push button switch with wires**
- **Battery 9 volt with connector**
- **Battery D cell x 1 in holder**
- **Battery C Cell x 1 in holder**
- **Battery AA x 1 and 2 in holder**
- **Battery AAA x 1 and 2 in holder**
- **Battery coin x 2 in holder**
- **Battery mini-12-volt x 1 in holder**

9. The IED circuit components will be tested in the 20L backpack with clutter in the following locations:

A. **Center of Main Compartment**

B. **Outside pocket front**

C. **Bottom of Main Compartment**

The following test sheet will be used to score the AI detection system on its ability to automatically detect the IED threat. Only systems that can pass the test with 100% detection should be submitted for IBDOCID certification. However, you can use the test to evaluate different AI detection systems to verify which one provides the best overall detection for the IED threat.

IBDOCIED STANDARDS

IBDOCIED AI X-RAY SOFTWARE IED DETECTION TESTING SHEET

#	IED THREAT CATEGORY	CENTER OF BACPACK		BOTTOM OF BACPACK		POCKET OF BACKPACK	
	PIPE BOMBS	ALARM	NO ALARM	ALARM	NO ALARM	ALARM	NO ALARM
1	Metal Pipe Bomb 2 in diameter with end caps						
2	PVC Pipe Bomb 2 in diameter with end caps and filled with sugar						
3	PVC Pipe Bomb 2 in diameter with end caps and filled with salt						
4	Metal Pipe Bomb Elbow 2 in diameter with plugs						
	Totals						
	Total Points ALARM		16 total points available				
	HAND GRENADES	ALARM	NO ALARM	ALARM	NO ALARM	ALARM	NO ALARM
1	Hand Grenade F1 Fragmentation INERT Metal						
2	Hand Grenade M67/69 Inert metal with hole in bottom						
3	Hand Grenade M26 Inert metal with hole in bottom						
4	Flashbang (M84) Inert metal						
	Totals						
	Total Points ALARM		16 total points available				
	FRAGMENTATION	ALARM	NO ALARM	ALARM	NO ALARM	ALARM	NO ALARM
1	Fragmentation Nails in a 4in x 4in square in line and side by side						
2	Fragmentation Ball Bearings in a 4in x 4 in square side by side						
3	Fragmentation Nuts in a 4in x 4 in square side by side						
	Totals						
	Total Points ALARM		9 total points available				
	DETONATORS	ALARM	NO ALARM	ALARM	NO ALARM	ALARM	NO ALARM
1	Detonator Inert Aluminium Bridge wire						
2	Detonator Inert Aluminium fuze head						
3	Detonator Inert Copper Bridgewire						
4	Detonator Inert Copper fuzehead						
5	Detonator Inert Aluminium steel sleeve						
6	Detonator Inert Copper steel sleeve						
7	Detonator Inert Copper improvised						
8	Detonator Inert E-match (can use live e-match)						
9	Detonator Non Electrical in 6 in of time/safety fuze						
10	Detonator Improvised e-match aluminium tube						
	Totals						
	Total Points ALARM		30 total points available				
	IED CIRCUIT COMPONETS	ALARM	NO ALARM	ALARM	NO ALARM	ALARM	NO ALARM
1	Relay single channel circuit board 5-12 volt						
2	Relay solder type 12 volt						
3	Relay single channel receiver 12 volt						
4	MOSFETT/SCR						
5	Toggle switch large with wires						
6	Toggle switch small with wires						
7	Slide switch medium with wires						
8	Rocker switch with wires						
9	Push button switch with wires						
10	Battery 9 volt with connector						
11	Battery D cell x 1 in holder						
12	Battery C Cell x 1 in holder						
13	Battery AA x 1 and 2 in holder						
14	Battery AAA x 1 and 2 in holder						
15	Battery coin x 2 in holder						
16	Battery mini-12-volt x 1 in holder						
	Totals						
	Total Points ALARM		48 Total Points Available				
	Combined ALARM Points		119 Total Points Available				

		TO BE FILLED OUT BY IBDOCIED FOR CERTIFICATION			
a	Manufacture:				
b	Product Name:	Date Received:			
c	Software Version:	Meets Complete Certification:	YES	NO	N/A
a	Sensitivity Level:	Pipe Bomb Certification:	YES	NO	N/A
b	X-Ray System Tested on:	Hand Grenade Certification:	YES	NO	N/A
c	X-Ray System Compatible with:	Fragmentation Certification:	YES	NO	N/A
a	Date of Testing:	Detonator Certification:	YES	NO	N/A
b	Tester Name:	IED Component Certification:	YES	NO	N/A

This test was developed by IBDOCIED for helping end users to test and measure AI x-ray detection technology