SMALL ARMS TRANSMITTER, SAT
– OPTIMIZING FORCE-ON-FORCE TRAINING

When training is the difference between life and death, there is no room for shortcuts. With the Small Arms Transmitter, soldiers must utilize the skills acquired during live fire practice to hit targets within the effective ranges of their weapons. Soldiers should be forced to apply correct practices and experience realistic results, gaining the confidence they'll need in similar combat situations.

The SAT trainer is designed for transparency, and to take soldiers as close to the experience of firing live rounds as possible. Soldiers can pick up weapons and fire them – so-called dynamic association – just as in real combat. They benefit from using proper aiming and triggering procedures and are penalized for not. The SAT impact targets at all effective ranges and is especially good in close combat training, such as in MOUT environments. The fitting and alignment of weapons requires a minimum of effort and is easily performed by the soldiers.

Automatic and transparent association

When a soldier picks up a weapon during training, the SAT will automatically – without soldier interaction – detect and associate the weapon to the correct soldier. De-association is also automatic. The soldier has to be "alive" or have a certain minimum of "remaining life" to fire a round. The link between soldiers and SATs is by radio and not visible in night vision goggles.

Advanced firing accuracy

Soldiers benefit from correct and accurate aiming and triggering procedures. This realism is achieved by the accuracy of the patented laser solution. Long range accuracy is similar as when firing live rounds. In close combat training, soldiers aim and engage enemies just as in real combat. The SAT provides realistic hit simulations from distances of one meter and up, and the problem of bouncing laser beams is minimized by advanced error detection.

Easy mounting and alignment

The Saab SAT uses a bracket that is easily clipped on the barrel of the weapon. This enables soldiers to mount the BT 47 themselves, with no worries about mislaid tools or worn screws. Alignment only requires a pocket-sized device that can carried by squads in the field. The capability to confirm alignment for soldiers in the field is crucial in building confidence in laser-based training. Alignment normally takes less than a minute.

One element of a training system

The SAT is a single application, a part of a larger system. The Personnel Detection Device (PDD) is the cornerstone of infantry systems and is the SAT interface to the training system. All firing and events are transmitted to and stored in PDDs. This information can subsequently be used during exercise evaluation. The SAT is normally used in force-on-force training, and opposing target systems, such as PDDs, vehicles, etc., have vulnerability tables that determine the effects from small arms weapons.

The SAT contains several anti-cheat functions. SATs (not in dry-fire) requires an "alive" PDD, and laser pulse triggering is only enabled when detecting a combination of flash, sound and shock preventing silent fire by soldiers taping/ knocking on the SAT.

Small Arms Alignment Device (SAAD)

Before alignment

After alignment

Mature and proven

The SAT is supplied to international customers in all climate zones, and to NATO nations, special forces, police and SWAT teams. More than 30 different weapon variants have been delivered in the following categories:

- assault rifles
- sniper rifles
- sub-machine guns
- light machine guns
- medium machine guns
- heavy machine guns.

KEY FACTS

Capabilities	
Dynamic player association	•
Anti-cheat functionality, PDD, with ”alive” or minimum ”remaining life” to enable firing	•
Anti-cheat functionality, blank ammunition (combination of flash, sound and shock)	•
Fully functional from 1 m distance	•
Simunition® compatible	•
Quick-mount, snap-on bracket	•
Pocket-sized alignment device (less than 50g)	•
Automatic power saving mode	•
Class 1 laser, unconditionally eyesafe, in accordance with IEC 60825-1 with amendments A1:1997 and A2:2001	
Full performance for full effective weapon firing range	•
BIT indication and low battery warning	•
Rugged dry fire functionality	O
Simulation code interoperable (MILES, OSAG, SIC, etc.)	O[1)]
Power supply	
Operational time	> 1 month
Battery, disposable or rechargeable	CR-2 or 2⁄3AA
Battery replacement (without tools)	20 sec
Size and weight	
SAT size	92 x 43 x 28 mm (3.6 x 1.7 x 1.1 in)
SAT weight, incl. battery and rubber cap	200 gr (7 oz)
Bracket weight, assault rifle	120 gr (4 oz)

• = Standard
O = Optional
- = Not available

1): MILES2000 harness requires the appended Miles Short Range Radio Module from Saab to control the SAT

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