



The Common Driver Trainer (CDT) Product Line

A product line of simulators to train military vehicle crews

SAIC[®]
From Science to Solutions

CDT Platform Supports Individual and Crew Combat Vehicle Driver Training Simulation

The CDT Product Line

CDT Stryker® Variant (CDT/SV)

CDT Mine Resistant Ambush Protected (MRAP) Variant (CDT/MV)

CDT/MV with Interchangeable Dash Panels

- RG31
- RG33
- Caiman
- MaxxPro®
- All Terrain Vehicle (ATV)

CDT Tank Variant (CDT/TV)

- M1A1
- M1A2

CDT Tank Engineering Variant (CDT/TEV)

- Joint Assault Bridge (JAB)
- Assault Breacher Vehicle (ABV)

CDT/Crew Compartment (CDT/C2)

CDT Mobile Training Facility (MTF)

Military vehicles are increasingly complex and expensive to operate. Soldiers who operate these vehicles must be trained in a cost-effective and efficient manner to ensure their mission readiness, survivability, and success in the contemporary operating environment. The Science Applications International Corporation (SAIC) team has developed a product line of virtual crew trainers based on a common architecture of hardware and software components. This architecture was used in the rapid development and fielding of the CDT variants. The architecture can be easily expanded to develop a wide variety of international military vehicles, such as the Piranha, MKV, Dingo,™ Mastiff, and Leopard.



CDT

The CDT is based on a common set of hardware and software components that establish an extensible baseline that can be easily expanded to develop simulators for current and future military platforms. This reuse of this proven architecture can greatly lower the cost of nonrecurring engineering while reducing development time.

Subsystems

The major components of the CDT system include

- Student Training Station (STS)
- Instructor/Operator Station (IOS)
- After Action Review (AAR) station

The STS is comprised of a motion platform, video display system and driver compartment (the vehicle cab). The motion system can employ either a six- or three- degree-of-freedom (DoF) platform that provides realistic motion cues to soldiers when executing training scenarios. The visual system presents a broad range of synthetic environments including geo-typical and geo-specific terrain databases. A new and improved display system increases fidelity of the visual scenes while reducing total life cycle costs and the footprint of the CDT system. All CDT cabs can be interchanged on the STS, increasing the scope of training that can be supported by the CDT.

The IOS allows the instructor to initialize training, monitor a driver's performance, and interject additional inputs into the scenario, such as changing environmental conditions and vehicle faults. An instructor can control up to eight separate STSs from a single IOS.

The AAR is a stand-alone application that can be hosted separately or on the IOS. It captures and scores all driver actions, and supports an immediate and effective after action review process that enhances and reinforces training of critical operator skills.



Capabilities

- Provides training on critical driving tasks associated with a particular military vehicle in diverse environments, times of day, and weather conditions
- Utilizes geotypical and geo-specific terrain databases that allow soldiers to operate in urban, mountain, desert, plains, and village regions
- Provides vehicle-specific, high-fidelity, operationally relevant scenarios for each variant, enabling users to develop a curriculum specific to their training needs
- Includes training on unique driving skills, such as loading and unloading ships, airplanes, railcars, and heavy equipment transporters
- Provides a scenario generation system (SGS) that allows users to create their own scenarios to train on tactics, techniques, and procedures as the operational environment evolves
- Records all driver actions and makes the information available for review during the exercise and in the after-action review process
- Evaluates driver performance against relevant tasks, conditions, and standards to help identify any deficiencies and required retraining

The CDT Vehicle Cab Variants Available Today

CDT Stryker Variant (CDT/SV). The first CDT variant produced for the Stryker vehicle. The CDT/SV provides training to soldiers in operating skills for the multiple variants of the Stryker vehicle.



CDT Tank Variant (CDT/TV). Through the use of interchangeable panels, one cab simulates the M1A1 and M1A2 main battle tanks.



CDT Mine Resistant Ambush Protected (MRAP) Variant (CDT/MV). The CDT/MV utilizes interchangeable dash panels to simulate the RG33, RG31, Caiman, and Maxxpro vehicles in the same vehicle cab variant.



CDT Mobile Variant. A complete CDT system that takes virtual simulator training to soldiers in the field. This ruggedized, custom-built mobile trailer contains a 6-DOF full-motion platform and self-sufficient power generator compatible with shore, U.S. and European power sources. It can carry up to two vehicle cab variants.



CDT Crew Cab (CDT/C2). The CDT/C2 provides individual and crew training. The driver station can be configured with a variety of CDT compatible dash panels to represent multiple variants. The right seat is equipped with appended systems such as an articulated arm that interrogates improvised explosive devices (IEDs).



CDT Tank Engineering Variant (CDT/TEV). The CDT/TEV simulates the Joint Assault Bridge (JAB) and Assault Breacher Vehicle (ABV). Both configurations have a driver cab and a commander's station that provides individual and collective training. The TEV will be fielded in the summer of 2011.

CDT Mobile Training Facility (CDT/MTF). The MTF is a complete CDT system that takes virtual simulator training to soldiers in the field. This ruggedized, custom-built mobile trailer contains a 6-DOF full-motion platform that can be powered by the self-sufficient power generator or connected to shore power. The MTF can carry up to two vehicle cab variants.

Integrated Simulation Center (ISC)



Visit SAIC's ISC in Orlando, Florida, for a demonstration of the CDT virtual simulators. The ISC features SAIC's core technical competencies in modeling and live, virtual and constructive simulation, systems engineering and integration, and total, end-to-end training solutions and tailoring of offerings for cross-cutting use. The ISC provides customers with the testbed environment to develop and experiment with differing concepts that support local and distributed use cases.

The center reflects SAIC's vision — to solve our customers' most important business and mission-critical problems through innovative applications of technology and domain knowledge. We measure our success through the strength of our customer relationships, repeat business, and our timely delivery of quality products and capabilities.

For More Information

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