AAJTS

Air National Guard (ANG) Advanced Joint Terminal Attack Controller (JTAC) Training System

BACKGROUND: The AAJTS is a high fidelity, fully immersive simulator designed to support JTAC training, combat controller squadron level continuation, and qualification and mission rehearsal training requirements.

The number of required JTAC training missions has recently increased from 2 simulation events to 8 simulation events. The AAJTS represents a convenient and economical JTAC training and certification solution as accredited by the Joint Fire Support Executive Steering Committee (JFS ESC).

For added versatility, the AAJTS is also designed to function as a multi-training platform. With different software applications, the AAJTS can be re-architectured as a training simulator for a multitude of uses.

STRUCTURE: Immersive Display Solutions, Inc. developed the framework of the AAJTS configuration which consists of a hard shell or fabric-covered domed visual display system specifically engineered for durability.

- Size options include: 3-meter dome, 4-meter dome, 5-meter dome, and the 6-meter dome.
- Each dome can be custom-engineered to fit into facilities with limited ceiling heights.
- The AAJTS uses WUXGA or WQXGA LED+IR projectors which are optimized for visual simulation and includes automated geometry warp and blending software.

FEATURES: QuantaDyn Corporation developed the core of the AAJTS configuration which creates a full suite of emulated, stimulated, and virtual military scenarios and threat environments by using:

- A powerful and intuitive Computer Generated Force (CGF) and Semi-autonomous Force (SAF) application.
- High fidelity Image Generator (IG) system that renders scenes in multiple spectrums.
- The AAJTS LED projection system includes IR functionality that can be configured to provide ultra-realistic, simulated night scenes when using standard military night vision devices.

The AAJTS uses the Virtual Reality Scene Generator (VRSG) from MetaVR to render the virtual scene in the dome display. VRSG produces low light/IR dome scenes, sensor spectrum modes, and targeting pod symbology.

SOFTWARE: AAJTS uses the Modern Air Combat Environment (MACE) from Battlespace Simulations, Inc. (BSI) as the CGF/SAF. MACE is flexible, intuitive, user-expandable, and provides the AAJTS with the following capabilities:

- Call-for-Fire (CFF), 5-line and 9-line interfaces for tasking constructive artillery and close air support entities.
- Fully flyable flight models for both constructive and virtual (pilot-in-loop) standalone CAS (close air support) training.
- Ability to create highly contested simulated battlespaces, including the simulation of the Integrated Air Defense System (IADS) and electronic warfare with jamming and countermeasures capabilities.
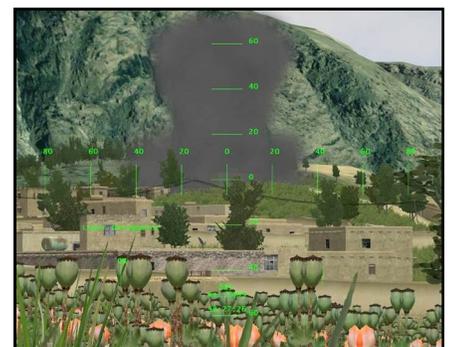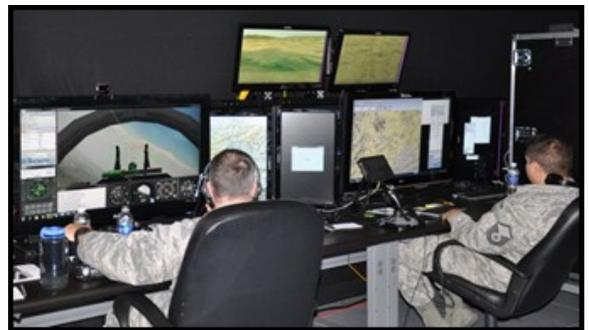
SOUND: The AAJTS is equipped with a dynamic 7.1 surround sound aural cueing system which provides a 360° sound field. Aural cues include:

- Vehicle, aircraft, weapons, personnel, detonations, and ambient sounds.
- Entity position and velocity vector (Doppler) effects.
- Distance sound effects such as explosion sound delay, terrain occulting, and interference along the sound path.

EQUIPMENT INTEGRATION: The AAJTS includes a specifically designed Trainee Military Equipment (TME) computer that integrates a wide array of military equipment:

- Multiple virtual or tactile-feel radios.
- Virtual Defense Advanced GPS Receiver (DAGR).
- Emulated binoculars.
- Laser range finder.
- Laser target designator.
- Infra-red pointer.
- ROVER feed viewer.
- M-4 carbine with scope.
- Virtual touch-screen simulation radios or full tactile-feel hardware radios.
- Night vision devices.
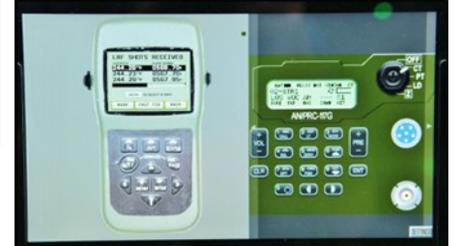
The aforementioned suite of emulated equipment comes standard. Other equipment options can be customized to customer requirements.

The AAJTS Instructor Operator Station (IOS) provides an intuitive interface for scenario creation, setup, and monitoring, and allows for the implementation of trainee equipment malfunctions and features such as mission record/playback.

ACCREDITATION: Accredited by Joint Fire Support Executive Steering Committee (JFS ESC) and STANAG. Meets or exceeds current NATO Standardization Agreement (STANAG) standards.

CURRENT CUSTOMERS: ANG, Headquarters Air Force (HAF)/Air Combat Command (ACC), and Air Force Special Operations Command (AFSOC).

CURRENT PRODUCTION: 17 ANG, 3 ACC/HAF, 1 AFSOC, and 1 for a foreign military.

SPECIFICATIONS AND PRICING:
Price structures are available based on the selections from the following specifications chart. Contact Randolph Training and Development (RTD) for more specific pricing details.

RTD has an Alliant contract vehicle for IT projects that can be used for purchasing.

	3-Meter Dome		4-Meter Dome		5-Meter Dome		6-Meter Dome	
Model	300U	300Q	400U	400Q	500U	500Q	600U	600Q
Dome FOV	200H × 90V (+60/-30)		240H × 100V (+70/-30)		270H × 100V (+70/-30)		240H × 120V (+90/-30)	
Geometry	Spherical		Spherical		Height Modified Spherical		Height Modified Spherical	
	No overhead cap		Partial overhead FOV		Partial Overhead FOV		Overhead FOV	
Projector Type	DLP		DLP		DLP		DLP	
Illuminator	LED/LED+IR		LED/LED+IR		LED/LED+IR		LED/LED+IR	

Projector Resolution	WUXGA	WQXGA	WUXGA	WQXGA	WUXGA	WQXGA	WUXGA	WQXGA
Resolution, arc-min/pixel	2.6	2	2.4	1.8	2.0	1.6	2.2	1.7
Resolution, arc-min/OLP (10% MTF)	5.5	4.2	5.0	3.8	4.2	3.2	4.8	3.7

Footprint, ft	12 × 13 × 11		16 × 16 × 12		20 × 19 × 12		22 × 20 × 12	
Projectors - Electrical	120-240V @ 50/60Hz		120-240V @ 50/60Hz		120-240V @ 50/60Hz		120-240V @ 50/60Hz	
VDS Max Power, amps	25	32	35	40	40	50	40	50
VDS Thermal, BTU/hr	< 6,000	< 6,600	< 10,600	< 11,000	< 12,700	< 13,200	< 12,700	< 13,200

For more information, contact Keith Seguin at Randolph AFB, 502d Trainer Development Squadron:
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