Communication and Sound System

ASTi has created a shrink-wrapped communication and aural cue product specifically for JTAC, CAS, CFF, and similar training systems. This targeted product utilizes ASTi's industry-proven COTS equipment and software to meet or exceed the specific requirements of the JTC TRS training device. Additional JTC TRS software creates a cost-effective, turnkey solution to enhance your training.

Being Updated

JTC TRS

JTC TRS Dome for Trainees

Speakers and Subwoofer

Tablet with Virtual Radio Panels

- - - - - - - - - OR - - - - - - - - - -

Realistic Radio Panels

PRC-150

PRC-117G

PRC-148

PRC-152

Server Rack
ASTi Voisus Server
8 Channel Amplifier

Pilot Station
Tablet - or - Integrated

IOS Station
Tablet - or - Integrated

ASTi offers a shrink-wrapped comms and sound solution product for JTC TRS.

Features and Capabilities

- Realistic Radio Communications
- Realistic Radio Panels (Virtual or Hardware)
- Complete Radio Environment Modeling
- Full Communication Plan and Net Configuration
- Satcom, Terrain, Jamming
- IOS/Pilot Station Role Play and Monitoring
- Separate Tablet or Fully Integrated Communications (IOS/Pilot Station)
- Intercom (Training System, Site-to-Site)
- Network Interoperability (DMO, DIS, HLA)
- Immersive 3D Sound (Range, Doppler, Occulting)
- DIACAP Approved

Requirements Met

Requirement	Meets	Exceeds
Radio Communications		
Realistic radio communications	✓	✓
Full radio frequency range support	✓	
Full Comm Plan and net configuration	✓	✓
Range, Propagation	✓	✓
LOS, first fresnel zone effects	✓	✓
Terrain/Occulting, Path Loss effects	✓	✓
AM/FM, Single Channel Simulation	✓	✓
Frequency Hop, Sincgars, HQ II	✓	✓
Plain/Secure Simulation	✓	✓
Interference, noise, squelch	✓	✓
SATCOM, DAMA	✓	✓
Jamming, Spoofing	✓	
IOS radio monitoring	✓	
Pilot station support for IOS	✓	✓
Intercom		
Training System and IOS intercom support	✓	
Private, Point-to-Point, Conference, Broadcast	✓	
Instructor to student support	✓	
Network site-to-site intercom	✓	
Network Events		
DIS Compatibility	✓	
HLA Compatibility	✓	✓
DMO Compatibility	✓	
Site-to-site intercom	✓	
Networked distributed radio simulation (DMO)	✓	✓

Requirement	Meets	Exceeds
Aural Cue and 3D Audio		
True 360 degree sound field	✓	✓
Aircraft, Vehicle, Weapons, Ordnance, Detonation, Ambient, Environment	✓	✓
Doppler effects	✓	
Range effects	✓	
Terrain/Occulting effects	✓	
Radio EME		
Tablet Based Virtual Radio Panels	✓	✓
Simulated PRC-117G Radio Panel	✓	✓
Simulated PRC-148 v4 JEM Radio Panel	✓	✓
Simulated PRC-150 Radio Panel	✓	✓
Simulated PRC-152 Radio Panel	✓	✓
Expandable/Scalable	✓	
AAR		
Supports 5 hours of continuous AAR	✓	✓
AAR export to disc	✓	
Information Assurance		
Removable hard drives for secure facilities	✓	
Robust IA	✓	✓
DIACAP Approved	✓	✓
Maintenance and Support		
Remote/Network based Maintenance, Configuration, Monitoring and Support	✓	✓

Being Updated

Sophisticated Radio Simulation

Spanning over 20 years of development and industry proven validation, ASTi provides a complete and sophisticated radio modeling solution. Simulation fidelity can also be adjusted from rangeless, clear radio communications to sophisticated, full-featured simulation to meet training needs. Some of the simulation features and capabilities supported include:

- Propagation, ranging, TX power, S/N
- Line of Sight (LOS), Over the Horizon (OTH), Fresnel zone effects
- Terrain occulting, path loss effects
- Full frequency range (e.g. HF, VHF, UHF)
- Waveform/net and modulation type (e.g. AM/FM)
- Single channel, frequency hop, crypto
- Interference, bandwidth modeling, noise, squelch
- SATCOM
- Audio effects, tones, noise
- Realistic half duplex and sidetone modeling
- Jamming
- Specific radio type/mode modeling (e.g. SINCGARS, HQ/HQII, SC, FH, Plain, Secure)
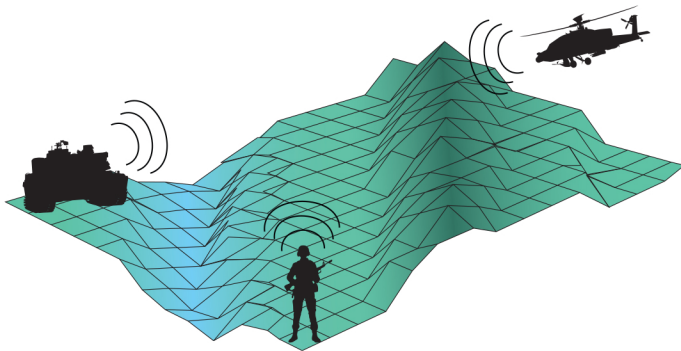- Communication plan construction and management

Radio Panel EME

ASTi's JTC TRS solution includes realistic, virtual radio panel solutions for the PRC-117G, PRC-148, PRC-150, and PRC-152. Simulated radio panels are hosted on a touch-based tablet and are highly realistic, providing appropriate keypad, display, selection knob, nomenclature, and general appearance to meet the JTC TRS training system requirements. As an option, ASTi can also supply realistic hardware based simulated radio panels.

3D Sound Simulation

ASTi's sound reproduction solution for the JTC TRS includes a highly realistic 3D sound environment ideal for the JTC TRS dome environment. Features include:

- Entity-based, environmental, and ambient sounds
- Contextual sound generation (source position, orientation)
- Distance, direction, and velocity effects (Doppler)
- Sound blocking/occulting (terrain, structures, obstructions)
- Sound library and entity mapping tools

Sound Equipment

ASTi's solution package provides a complete turnkey sound solution, including speakers, subwoofer, cabling, and network based 8-channel amplifier. Alternatively, customers may choose their own sound equipment if preferred.

Small Equipment Footprint

ASTi's JTC TRS solution takes up just 4U of rackspace consisting of ASTi's Voisus server sound and communications modeling platform and 8-channel networked audio amplifier.

Communications Software Client

ASTi's communications software client is a low footprint, embedded software application that is easily integrated into your IOS and Pilot workstation. Each client provides operator communications capability with access to intercom, station calling, and simulated radio or full radio modeling and intercom access. Some of the features and capabilities included:

- Full radio simulation and ICS capabilities
- Dynamically adapts to changing communications assets, configuration, and radio environment.
- ICS/Radio communications control GUI included
- Convenient API also allows generation of your own GUI and/or integration with pilot and IOS user interface
- Full-featured control capabilities such as TX/RX selection, asset volume, net selection, asset lockdown/lockout, and station dial up
- Variety of headset and PTT devices supported
- Optional tablet based control and audio solution

Intercom

ASTi's JTC TRS solution also provides extensive intercom capabilities. Support includes features and capabilities such as:

- Point-to-point, dial-up, and conferencing
- Private nets and broadcast/PA
- Flexible configuration allowing a wide range of training system intercom capabilities and operation
- Network intercom for local site and site-to-site intercom capabilities including DMO support

Voice Recognition/Synthetic Speech

Optional integrated voice recognition and synthetic speech capabilities can be added to the solution package. ASTi has proven experience delivering these technologies and has invested significantly in improving results, expanding capability, and providing a highly integrated solution. Features supporting JTC TRS include:

- Multiple voice recognition input support
- Entity/Communications oriented synthetic response
- Multiple/Tunable synthetic voices
- Application/Mission specific tuning
- Support tools for maintenance and enhancement

Pricing

Hardware Item	Quantity
Voisus Server Computer Platform	1
Tablet-based Virtual Radio Panel	2
8-Channel Network Audio Amplifier	1
Speakers, Headsets, PTT...	1

Base Solution Software Package Items	Quantity
Pilot, IOS Radio/Communications Software Client	2
Radio Simulation, Propagation Modeling	incl.
SC/FH, Plain/Secure, Sincgars, HQII	incl.
Full comm plan, waveform, and net configuration	incl.
Communications/Radio Tones, Audio Effects	incl.
Intercom (local, site-to-site)	incl.
DIS, DMO Support	incl.
Communications Terrain Occulting/Path Loss Package	1
Satcom and Jamming Packages	1
3D Entity Sound Environment Package	1
Sound Occulting Package	1
JTC TRS Interface Package	1
Total	**$10,500**

Additional Options

Integrated Voice Recognition/Synthetic Speech
Hardware-based radio panels
Pilot/IOS Tablet-based solution
Tactical Data Link
...
...
... Maintenance

Being Updated

Company Overview

Advanced Simulation Technology inc (ASTi) was founded in 1989 to provide communications and environmental sound systems for flight simulators and other real-time simulation and training devices. To date, ASTi has shipped over 7000 systems across the U.S. and worldwide.

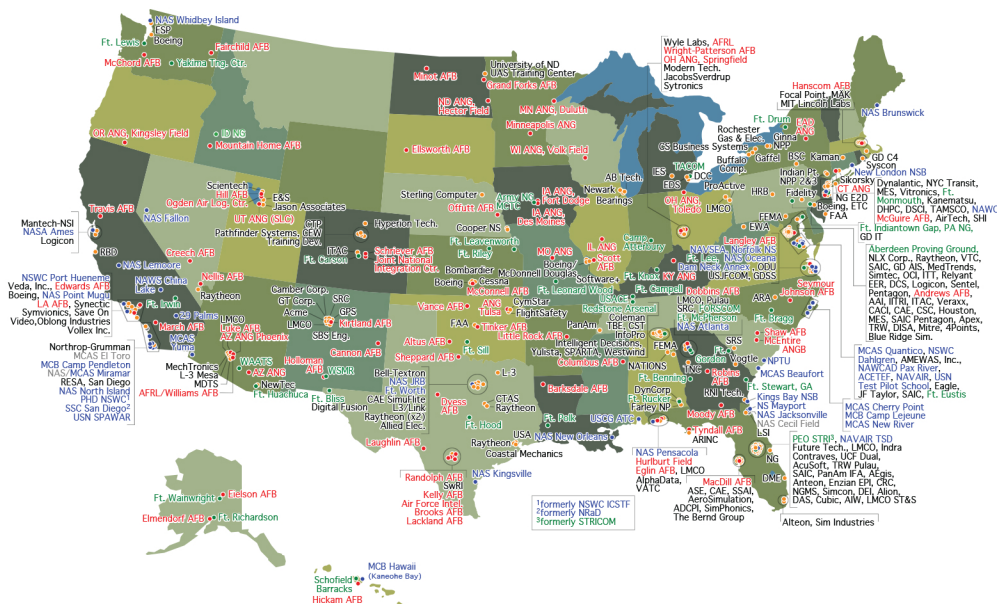## Web Resources

Homepage
www.asti-usa.com

Voisus Products
www.asti-usa.com

YouTube Channel
www.youtube.com/user/advancedsimtechinc

U.S. Installations

ASTi's powerful comms and audio systems enhance your training environment and make it more effective.

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