Product Brief

OmniAudio Simulation Server

AVB/TSN based Simulation Server designed to provide military grade Level-D sound and communication simulation environment.

- Provides both environmental sound and communication solutions
- Simulate radios, intercom systems, navigation aids, and the entire suite of communication systems
- Simulate environmental and platform sounds
- Utilizing IEEE AVB/TSN technology for low latency media transfer over ethernet
- Capable for DIS and HLA connectivity
- 3D spatial audio (Ambisonics) generation capability



OmniAudio is a full featured audio and communications system designed for military level modeling and simulations. Capable of simulating platform (ground vehicle, aircraft, ship) related sound and communication equipment.

Audio

OmniAudio can synthesize both modelled and readily available sounds in order to provide realistic training environments. Modelled sounds include engines, malfunctions, and weapons generated by using OmniAudio Modelling Workstation.

OmniAudio provides dynamic simulation environment in which the values or the events generated by simulation host computer are input to simulation server in order to instantly synthesize spectrally complex sounds. Modelling components include but not limited to Jet/Turbine engines, Helicopter main and rotor sounds, propeller sounds, transmission sounds, intake, exhaust sounds and more.

OmniAudio includes simulation of navigation aids such as VOR, TACAN, NDB, VORTAC and Marker Beacon.

Spectral Analysis Option

Level-D Spectral Analysis option simplifies FAA re-qualification of sound system by capturing and comparing sounds from any sources.

Radios & Communications

OmniAudio provides military radios and comms with advanced propagation model which takes terrain, distances and channel characteristics into consideration.

In addition to radios transmitters and receivers, components like ADF receivers, jammers, cryptos are easily modelled according to user requirements. Comm objects have features like:

- AM/FM transmission and band interference
- Specific radio band modeling such as HF, UHF, VHF
- Advanced channel modelling with transmission/reception and station fade based on distance and signal strength and antennae gain based on frequency
- Press-to-Talk, Hot/Cold Mic, volume control
- Squelch, AGC, tuning tones
- Realistic HF effects based on date-time, solar cycle, sunspot activity.

OmniAudio is also capable of providing intercom services for communication of instructors independent of simulated comm channels.

- Flexible voice switching for intercom between trainees and instructors
- Voice warning and warning tone simulation
- Press-to-Talk, Vox, hot/cold mic, and volume control

Specifications

Audio

Platforms	Ground, Air, Marine
Sampling	16-bit depth for 48 kHz

Radios & Comms

Frequency	HF/VHF/UHF
Modulation	AM/FM/HQ/Intercom
Features	Frequency based antenna gain FM catch effect Crypto and jamming Squelch, AGC, tuning tones

Spectral Analysis

Fidelity	1/3 Octave spectral bands

Technical Features

Latency	< 8 ms
Cabling	Cooper - CAT-5E or higher

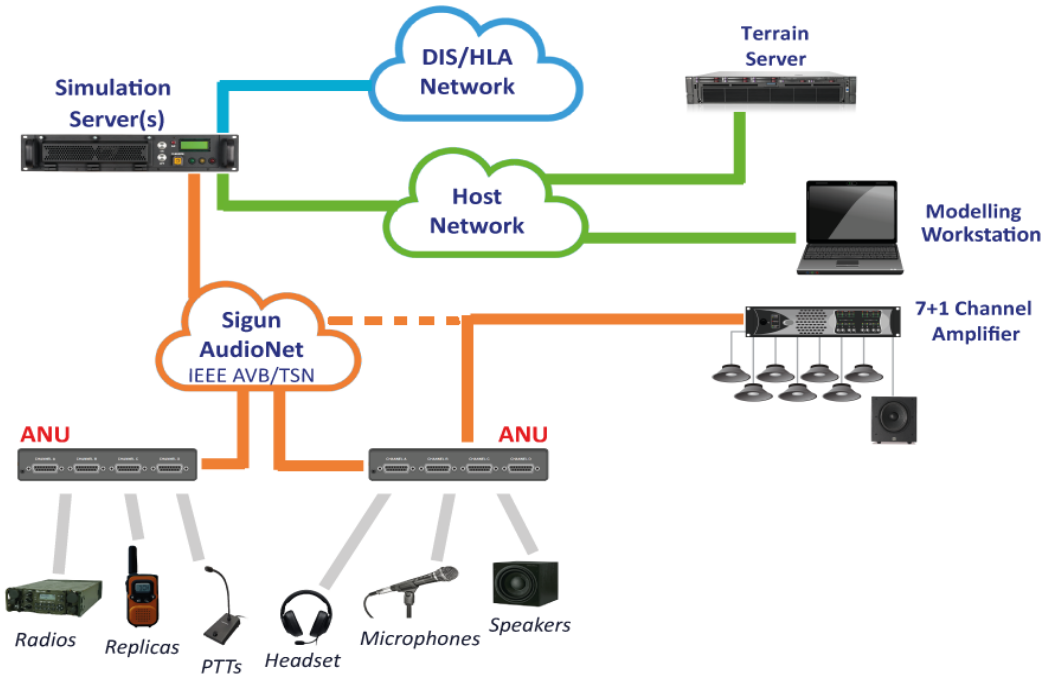
Physical Dimensions

Depth	55 cm (21.7”)
Width	43 cm (16.9”)
Height	9 cm (3.5”)
Form Factor	2U

Interface

Modelling	REST API
Network	IEEE 802 AVB/TSN

OmniAudio Simulation Environment



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