

Vehicle Acoustic Warning and Surveillance System

Mobile Command Center Fuses Data and Localizes the Target



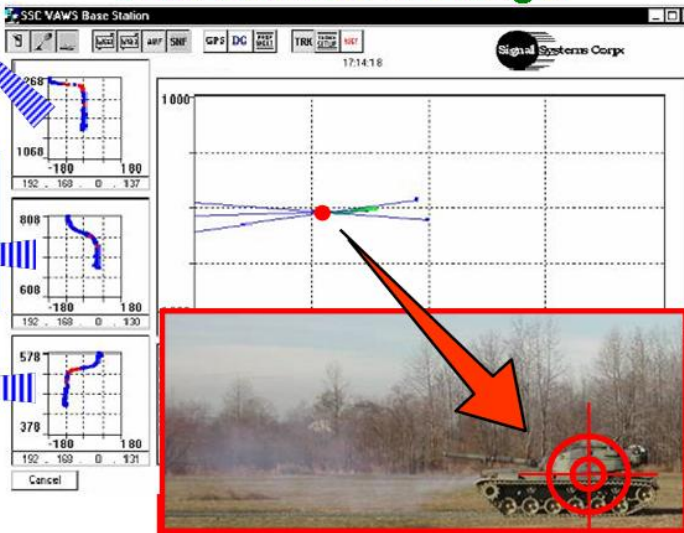
On-the-Move Node



NLOS Node



Stationary Node



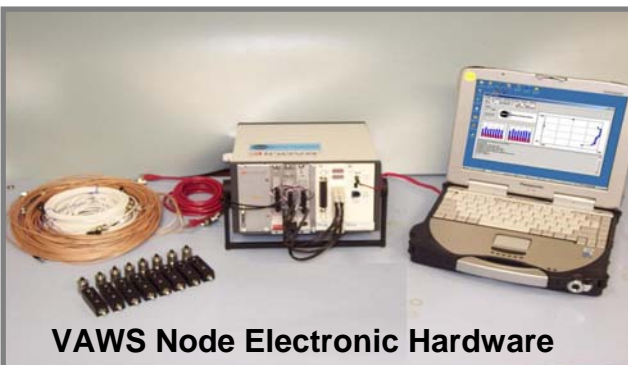
Complete Acoustic System

Single Node Operation:

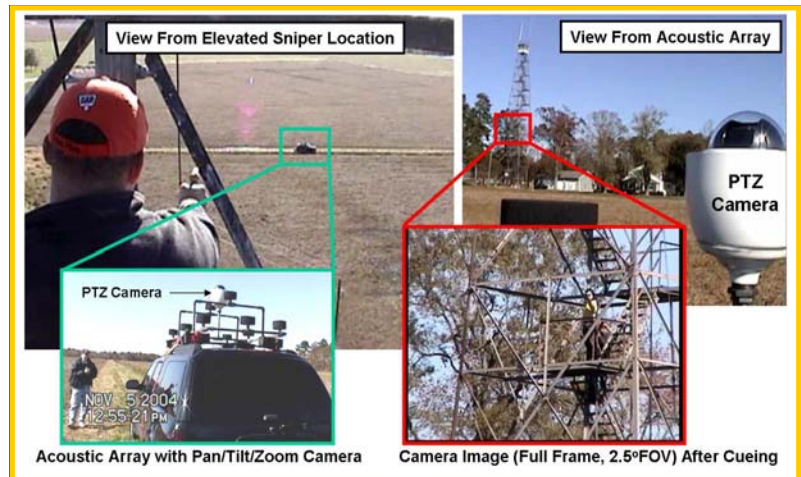
- > Noise Cancellation
- > Beamformer
- > Vehicle & Arms Detection
- > Tracker
- > Classifier
- > Microphone Array
- > Reference Sensors
- > Local Contact Display
- > Acoustically Cued PTZ Camera

Mobile Base Station:

- > Wireless Network to Nodes
- > Data Fusion
- > Localization
- > Graphical Target Tracks



VAWS Node Electronic Hardware



Acoustic Array with Pan/Tilt/Zoom Camera

Camera Image (Full Frame, 2.5°FOV) After Cueing

Features

- > Fully Integrated Acoustic Sensor
- > Technology Readiness Level 6
- > Industry Leading Noise Cancellation
- > On the Move Operation
- > NLOS Sensing
- > Contact Report Output

Benefits

- > Increased Tactical Mobility
- > 300% increase in detection range
- > All functions adapted to ground vehicle



Ruggedized Large Aperture Array

(VAWS)

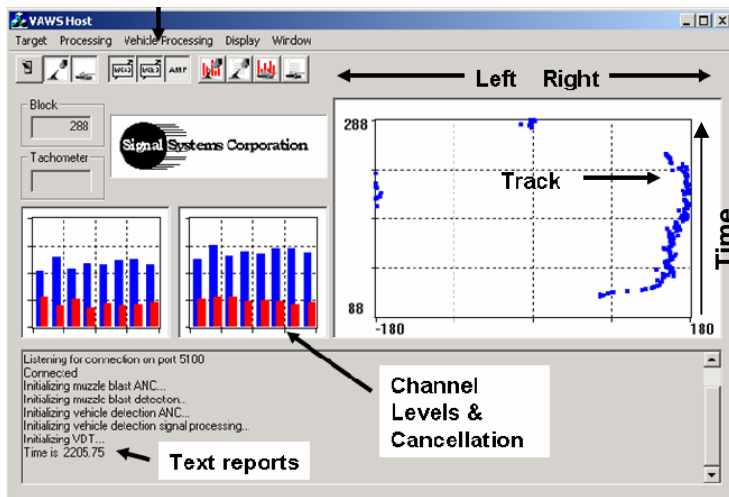
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Typical VAWS Specifications

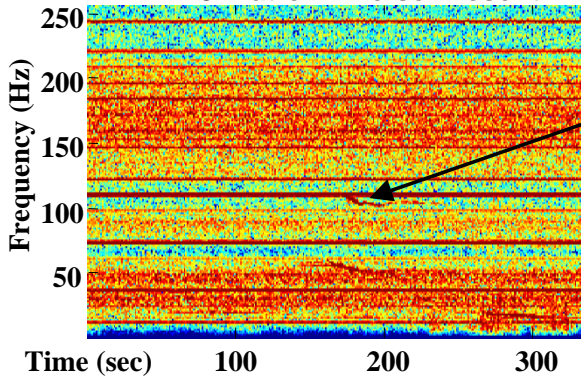
Parameter	Engine @ Idle
Vehicle Detection Range	100 to >2000m
Impulse Detection Range	600-3000m
Platform Noise Reduction	10 to > 40 dB
Reliable Speech Intercept Range	>5m
Vehicle Localization	<10degree azimuth error
Multi-node Localization	<20% range error
Power	<75 watts
Processing Electronics	3 3u cards
Sensor Volume (each)	14 in3
Number of Sensors	1-16
Sub-System Mass (w/o cables)	<12 lbs
Network Protocol	TCP/IP
Real Time Operating System	Integrity

Processing Options

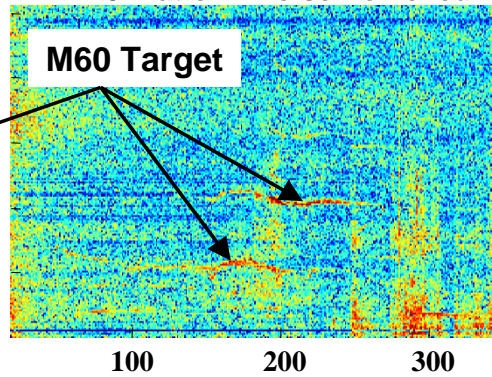


VAWS Node Display

M113 Platform Noise Present



M113 Platform Noise Removed



VAWS
Cancellation
Performance
Spectrograms

VAWS Node Functional Block Diagram

