REAK DOWN COMMUNICATION BARRIERS BY LISTENING AND TALKING THROUGH THEM!

Monitor & Project Sounds Wirelessly Through Structures & Other Objects for Crisis Intervention & Tactical Covert Intelligence Gathering



STARS INTRODUCTION & DEFINITIONS:

- The Structural Tactical Receiver & Sender (STARS™) is a multichannel, half-duplex, wireless communications system which uses structural vibrations to sense and create sounds.
- The use of "structural vibrations" offers a new/unique method to communicate and/or gather intelligence that can complement and/or be used as an alternative to traditional Crisis Response Equipment.

- Multi-Channel:

- Each STARS™ System includes (4) individual Sensor Nodes that can all be used simultaneously.
- Each Sensor Node channel can be independently selected to be in either <u>Listen</u> or <u>Projection</u> mode.



Sensor Node



ST - RS INTRODUCTION & DEFINITIONS:

Half-Duplex:

- Each channel between the Command Node & Sensor Node is either listening or projecting, but <u>NOT</u> both, at the same time.
- · This is like a traditional walkie-talkie



- The Sensor Node(s) wirelessly connect to the Command Node over 900Mhz radio links; there are NO cables.
- The radio links are protected through 256-bit Advanced Encryption Standard (AES) to prevent unauthorized signal access.

STARS INTRODUCTION & DEFINITIONS:

Structural Vibrations:

 When subjected to sound most walls, windows, doors, and other surfaces respond with very small vibrations.



- A single or multiple Sensor Node(s) may be applied to flat panels of a structure (doors, windows, walls) or an object such as a vehicle to sense and create vibrations.
 - Listen Mode: In this mode, the Sensor Node is sensing any vibrations of the structure/object to which it is attached.
 - Sensed vibrations are converted into a signal that is passed to the Command Node.
 - The Command Node passes these signals on to the Voice Outgoing (VOG) operator's (i.e. Primary Negotiator) headphones.
 - These audio signals can be monitored by other team staff by connecting external devices to the analog output ports located on the Command Node or through a local area network.
 - Projection Mode: In this mode, the VOG Operator speaks into a microphone and that signal is passed to the Command Node which then transmits it to the desired Sensor Node(s).
 - The Sensor Node(s) convert the signal into sound by vibrating the surface to which they are attached.
 - The surface acts like a drum head, creating sound inside the target structure/object.

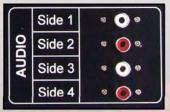
STARS UNIQUE FEATURES & BENEFITS:

- Facilitates communications and/or intelligence gathering when responding to a Crisis Incident that:
- Does <u>NOT</u> require Tactical Team staff to have to breach and deploy a "foreign object" such as a Throw Phone or Cell Phone into the target structure or object.
- · Requires minimum subject cooperation/involvement.
 - There is NO telephone handset that a subject can hang-up or refuse to answer
- Sensor Nodes may be used for the sole purpose of gathering covert audio intelligence before, during, and after the incident:
 - Use of sound/vibrations to help:
 - Determine presence of a subject (check for Signs of Life)
 - Determine and Track subject location
 - Sensor Nodes may be used to project audio to create auditory diversions to assist with Tactical Team entry

STARS UNIQUE FEATURES & BENEFITS:

- May Serve as Valuable Communications Tool for Negotiations with a Subject Barricaded in a Vehicle.
- Audio Distribution and Client Preference Recording Options:
 - Audio may be monitored by/broadcast to multiple team staff by connecting external audio devices to the analog audio output ports located on the Command Node or through a "wired" local area computer network.
 - Audio recording option is configured at the factory according to client's preference:
 - Never Record
 - Delayed Start Record
 - Selective Record
 - Continuous Record
 - To prevent tampering/preserve integrity, all record audio data files feature a "digital fingerprint."







$ST + RS^*$ system components:

- Command Node:

- Computer with specialized software with Web Server and Java pre-installed
 - All features are accessed via a Web Browser when the Command Node is connected to a Personal Computer (PC).
- Can run either on a stand alone or local (wired) network
- · Powered off of 12v DC:
 - Wall Outlet Power Port
 - Vehicle Power Port





STARS SYSTEM COMPONENTS:

- Sensor Nodes:

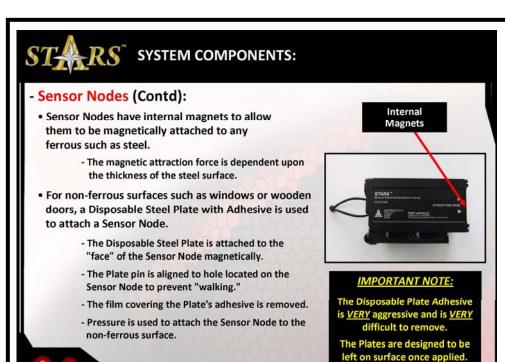
- Delivered with (4) Battery Powered Sensor Nodes:
 - Sensor Node accepts (12) A123 lithium-ion nonrechargeable batteries
 - When fresh/new batteries are used a Sensor Node can be powered/operated for a minimum of (8) hours.



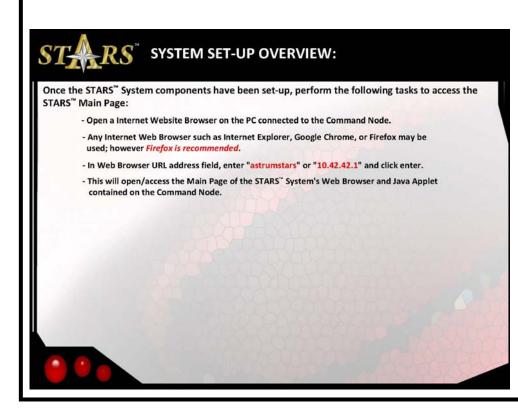
Sensor Node



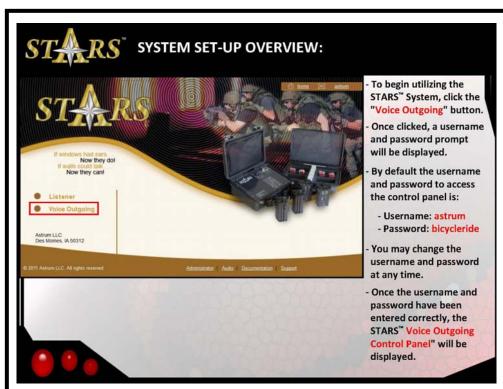
Sensor Node Battery Compartment

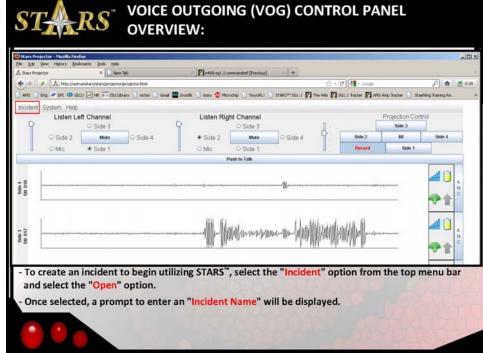


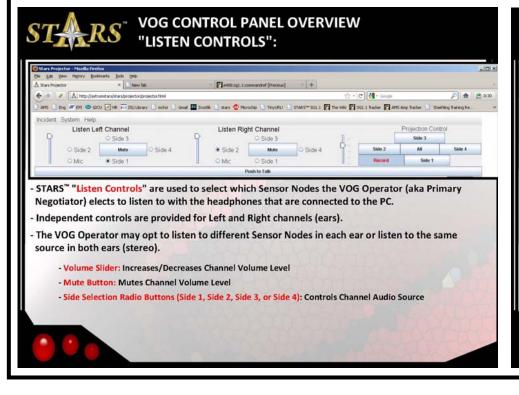


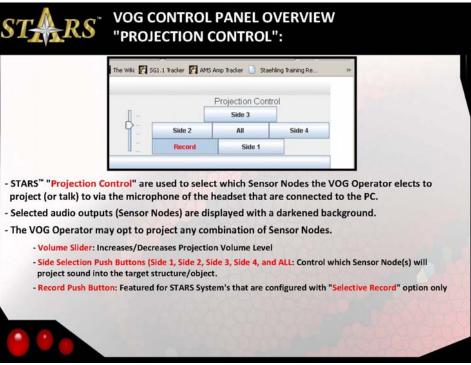


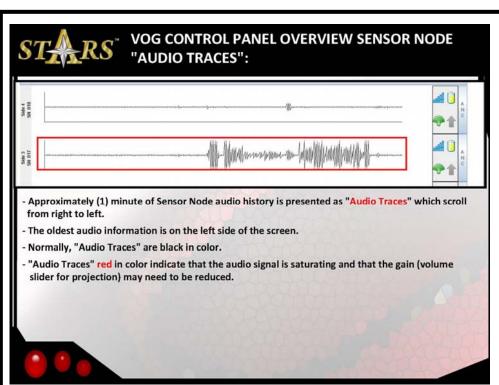


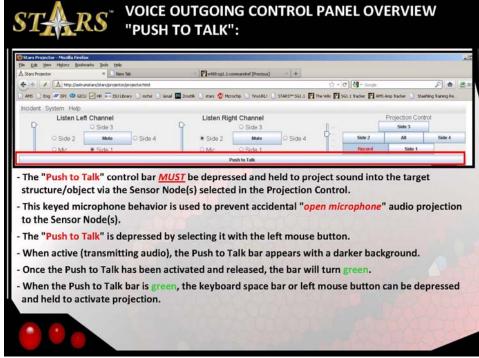


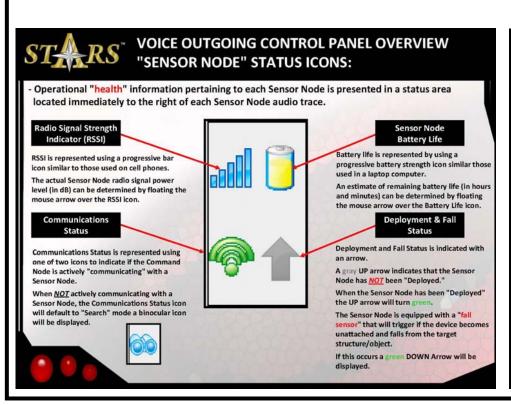


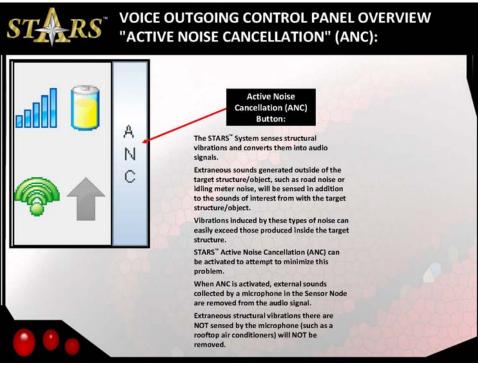


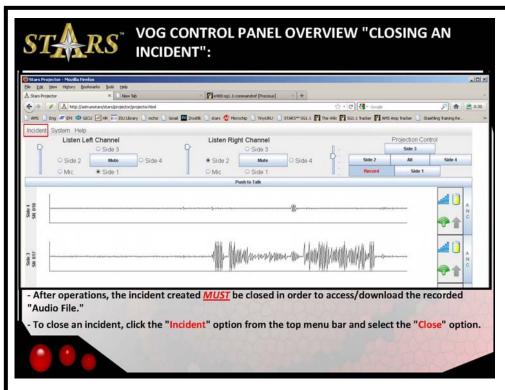


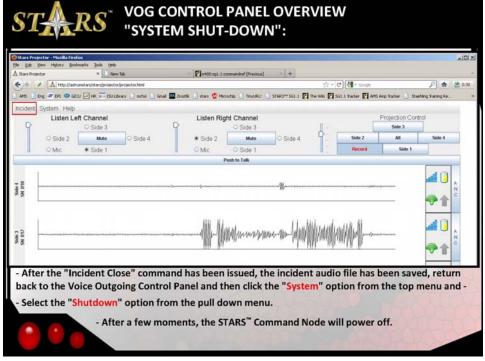




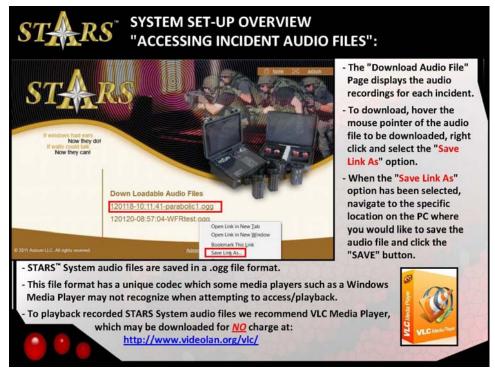












STARS™ SYSTEM OPTIONS & PRICE SCHEDULES:

ETGI Item#	Item# Description		
ETG-STARS-SYS1-R	Structural Tactical Acoustic Receiver & Sender (STARS'*) System with Delayed Start Record Command Node and Standard Components/Accessories	\$16,900.00	
ETG-STARS-SYS2-R	Structural Tactical Acoustic Receiver & Sender (STARS™) System with Never Record Command Node and Standard Components/Accessories		
ETG-STARS-SYS3-R	Structural Tactical Acoustic Receiver & Sender (STARS™) System with Continuous Record Command Node and Standard Components/Accessories		
ETG-STARS-SYS4-R Structural Tactical Acoustic Receiver & Sender (STARS'*) System with Select Record Command Node and Standard Components/Accessories		\$16,900.00	

IMPORTANT NOTE: STARS requires a non-dedicated personal computer (PC) with a Java 1.6+ for operations.

Item #'s ending with the letter "R" are NOT delivered with a PC.

All STARS" Systems are delivered with the following Standard Components & Accessories:

- (1) Command Node
- (1) PC Headset
- (1) Network Cable
- (1) Whip Antenna with 10 ft. Extension Cable
- (4) Sensor Nodes with foam lined Pelican® 1500 Transport/Storage Case
- (32) Sensor Node Disposable Attachment Plates with Adhesive
- (48) Li-ion Batteries (non-rechargeable)
- (1) A/C Power Cord
- (1) Vehicle D/C Power Adapter

Prices are subject to change without notice.

ST_RS STARS COMMAND NODE SPECIFICATIONS:

STARS [™] Co	ommand Node Specifications
Network Port [*] :	LAN/Ethernet for non-dedicated PC, LAN, or LAN router connection
Antenna Connector:	N-Female
Audio Output Ports:	(4) RCA Female Jacks (allows for connection of external audio device to monitor the audio data of each Sensor Node)
Power:	12v DC (provided with AC/DC power supply)
Housing/Color:	Pelican® 1450 case, black
Extension Dimensions:	16.00 X 13.00 X 6.87" (40.6 X 33 X 17.4 cm)
Weight:	12.2 lbs (5.53 kg)
Audio Recording/Logging*:	(4) options available/delivered to client's preference

IMPORTANT NOTE: STARS requires a non-dedicated personal computer (PC) with a Java 1.6+ for operations.

"STARS" Command Node audio data recording/logging option is programmed to client's preference at factory. To prevent tampering/preserve evidence integrity all recorded/logged audio data files feature a "digital fingerprint." Audio recording/logging options include: Delayed Start Record, Never Record, Continuous Record, or Select Record.



Command Node (Open/Top View)

ST→RS STARS SENSOR NODE SPECIFICATIONS:

STARS [™] Sensor Node Specifications				
Radio Frequency (RF) Transmission:	900Mhz secured transceiver with AES 256 bit encryption			
Effective RF Operating Distance in Residential Environments:	400 ft. (+/-) with Whip Antenna or 1,000 ft. (+/-) with Small Parabolic Antenna			
Effective RF Operating Distance Line of Sight (LOS) Conditions :	400 ft. (+/-) with Whip Antenna or 1,500 ft. (+/-) with Small Parabolic Antenna			
Operating Time:	8 Hours (+/-) (when powered by (12) li-ion non- rechargeable batteries)			
Dimensions:	3.0 X 3.5 X 6.0" (7.62 X 8.89 X 15.24 cm)			
Weight (with (12) batteries installed):	2.90 lbs (1.32 kg)			
Housing Material/Color:	Weather sealed anodized aluminum/tactical black			
Attachment Methods :	Direct magnetic connect to ferrous materials/surfaces such as steel and disposable artiachment plate with adhesive connect to non-ferrous materials/surfaces such as windows or wood			
Vibration Sensor Material:	Advanced SONAR technology derivative used by the U.S. Navy			
Active Noise Cancellation:	Rear-mounted microphone for outside background noise reduction			
Transport/Storage:	Foam-lined Pelican* 1500 case, black (stores all (4) Sensor Nodes).			



Sensor Node

*Whip or Small Parabolic Antennae Attach to Command Node via a N-Female connector.

"Disposable Attachment Plate adhesive is effective in temperatures as low as 30° F (-1.11° C) and as high as 100° F (37.78° C).

ST→RS STARS ANTENNAE SPECIFICATIONS:

STARS™ Whip	Antenna Specifications:
Mounting Platform:	Magnetic Base
Base Diameter:	1.2" (3.05 mm)
Antenna Length:	7.2" (18.29 mm)
Weight:	0.5 lbs (226.8 g)
Hardwired Cable Lead Type/Length:	N-Male, 4.0 ft. (1.22 m)
Extension Cable Length:	10.0 ft. (3.05 m)

STARS [™] Small Parabolic Antenna Specifications:			
Mounting Platform:	Mast Platform (not included)		
Antenna Dimensions:	11.8 X 15.7 X 15.0" (29.97 X 39.88 X 38.10 mm)		
Weight:	4.7 lbs (2.13 kg) (without mast)		
Hardwired Cable Lead Type/Length:	N-male, 4.0 ft. (1.22 m)		
Extension Cable Length:	20 ft. (6.1 m)		

"Mast with 1.2 - 2.3" (3.05 - 5.84 mm) diameter pole required for mounting (not included).



whip Anteni



Small Parabolic Antenna

RS[™] STARS[™] SYSTEM OPTIONS & PRICE SCHEDULES:

ETGI Item# Description		MSRP	
ETG-STARS-SYS1-PC	Structural Tactical Acoustic Receiver & Sender (STARS'™) System with Delayed Start Record Command Node, Dedicated Laptop PC and Standard Components/Accessories	\$17,499.95	
ETG-STARS-SYS2-PC	Structural Tactical Acoustic Receiver & Sender (STARS'*) System with Never Record Command Node, Dedicated Laptop PC and Standard Components/Accessories		
ETG-STARS-SYS3-PC	SYS3-PC Structural Tactical Acoustic Receiver & Sender (STARS'**) System with Continuous Record Command Node, Dedicated Laptop PC and Standard Components/Accessories		
TG-STARS-SYS4-PC Structural Tactical Acoustic Receiver & Sender (STARS'*) System with Select Record Command Node, Dedicated Laptop PC and Standard Components/Accessories		\$17,499.95	

*IMPORTANT NOTE: STARS** requires a non-dedicated personal computer (PC) with a Java 1.6+ for operations. Item #'s ending with the letters "PC" are delivered with a Laptop PC to be dedicated for STARS™ System operations.

All STARS[™] Systems are delivered with the following Standard Components & Accessories:

- (1) Command Node
- (1) PC Headset
- (1) Network Cable
- (1) Whip Antenna with 10 ft. Extension Cable
- (4) Sensor Nodes with foam lined Pelican* 1500 Transport/Storage Case
- (32) Sensor Node Disposable Attachment Plates with Adhesive
- (48) Li-ion Batteries (non-rechargeable)
- (1) A/C Power Cord
- (1) Vehicle D/C Power Adapter

Prices are subject to change without notice.

STARS[™] STARS[™] SYSTEM OPTIONS & PRICE SCHEDULES:

ETGI Item # Description		MSRP
ETG-STARS-SYS1-PC-ANTP	Structural Tactical Acoustic Receiver & Sender (STARS™) System with Delayed Start Record Command Node, Dedicated Laptop PC, Small Parabolic Antenna Kit and Standard Components/Accessories	\$17,999.95
ETG-STARS-SYS2-PC-ANTP	Structural Tactical Acoustic Receiver & Sender (STARS™) System with Never Record Command Node, Dedicated Laptop PC, Small Parabolic Antenna Kit and Standard Components/Accessories	\$17,999.95
ETG-STARS-SYS3-PC-ANTP	Structural Tactical Acoustic Receiver & Sender (STARS™) System with Continuous Record Command Node, Dedicated Laptop PC, Small Parabolic Antenna Kit and Standard Components/Accessories	\$17,999.95
ETG-STARS-SYS4-PC-ANTP	Structural Tactical Acoustic Receiver & Sender (STARS™) System with Select Record Command Node, Dedicated Laptop PC, Small Parabolic Antenna Kit and Standard Components/Accessories	\$17,999.95

"IMPORTANT NOTE: STARS™ requires a non-dedicated personal computer (PC) with a Java 1.6+ for operations. Item #'s ending with the letters "ANTP" are delivered with a Laptop PC to be dedicated for STARS" System operations as well as a Small Parabolic Antenna Kit which includes a 20 ft. Mast Cable, Lightning Protector, and 4 ft. Interface Cable. NOTE: Mast with 1.2" to 2.3" diameter pole required for mounting (not included).

All STARS™ Systems are delivered with the following Standard Components & Accessories:

- (1) Command Node
- (1) PC Headset
- (1) Network Cable
- (1) Whip Antenna with 10 ft. Extension Cable (1) A/C Power Cord
- (4) Sensor Nodes with foam lined Pelican* 1500 Transport/Storage Case
- (32) Sensor Node Disposable Attachment Plates with Adhesive
- · (48) Li-ion Batteries (non-rechargeable)
- . (1) Vehicle D/C Power Adapter

Prices are subject to change without notice.

STARS™ SYSTEM LEASE-TO-OWN EXAMPLE:

Asset Description	Total Asset Value/Finance Amount	Finance Term (Months)	Rate Factor	Monthly Payment Amount	Payments/ Year	Adv. / Arr.
Structural Tactical Acoustic Receiver & Sender (STARS TM) System with Continuous Record Command Node, Dedicated Laptop PC, Small Parabolic Antenna Kit and Standard Components/Accessories	\$17,999.95	24	0.05068	\$912.24	12	Advance
Structural Tactical Acoustic Receiver & Sender (STARS'*) System with Continuous Record Command Node, Dedicated Laptop PC, Small Parabolic Antenna Kit and Standard Components/Accessories	\$17,999.95	36	0.03614	\$650.52	12	Advance
Structural Tactical Acoustic Receiver & Sender (STARS™) System with Continuous Record Command Node, Dedicated Laptop PC, Small Parabolic Antenna Kit and Standard Components/Accessories	\$17,999.95	48	0.02888	\$519.84	12	Advance
Structural Tactical Acoustic Receiver & Sender (STARS™) System with Continuous Record Command Node, Dedicated Laptop PC, Small Parabolic Antenna Kit and Standard Components/Accessories	\$17,999.95	60	0.02453	\$441.54	12	Advance

IMPORTANT NOTE: This estimate was created January 19th, 2012 and is for reference purposes, NOT a commitment to finance. To learn more about ETGI's Municipal Asset Lease-to-Own programs and to review an official estimate, please contact us directly at 800-873-2872 or visit www.etgi.us.

S STARS SYSTEM ACCESSORY PRICE SCHEDULE:

ETGI Item #	Description	MSRP
ETG-STARS-ANTP	Small Parabolic Antenna Kit; includes: 20 ft. Mast Cable, Lightning Protector, and 4 ft. Interface Cable. NOTE: Mast with 1.2 to 2.3" diameter pole required for mounting (not included).	\$750.00
ETG-STARS-DAP8	Additional/replacement 8-pack of Disposable Attachment Plates with Adhesive (for Sensor Node non-ferrous material/surface attachment)	\$48.00
ETG-STARS-BAT12	Additional/replacement 12-pack of li-ion 123A batteries (non-rechargeable)	\$60.00
ETG-STARS-ANTW	Additional/replacement Whip Antenna with 10 ft. Extension Cable	\$92.00

STARS™ SYSTEM WARRANTY INFORMATION:

Astrum, LLC warrants the Structural Tactical Acoustic Receiver & Sender (STARS**) System to be free of defects in materials and workmanship for a period of (3) three years from the date of delivery, and will repair or replace products free of charge qualifying under this warranty. This warranty does not include damage from accident, misuse, negligence, improper operation or maintenance, or unauthorized repairs or alterations, and any other warranties or representations express or implied are disclaimed, including those of merchantability, fitness or suitability for a particular purpose. Astrum, LLC products are for use only by persons authorized by applicable local, state, and federal laws. Astrum, LLC is not responsible for any civil or criminal claims arising from any intentional or accidental misuse. No license is granted by implication or otherwise.