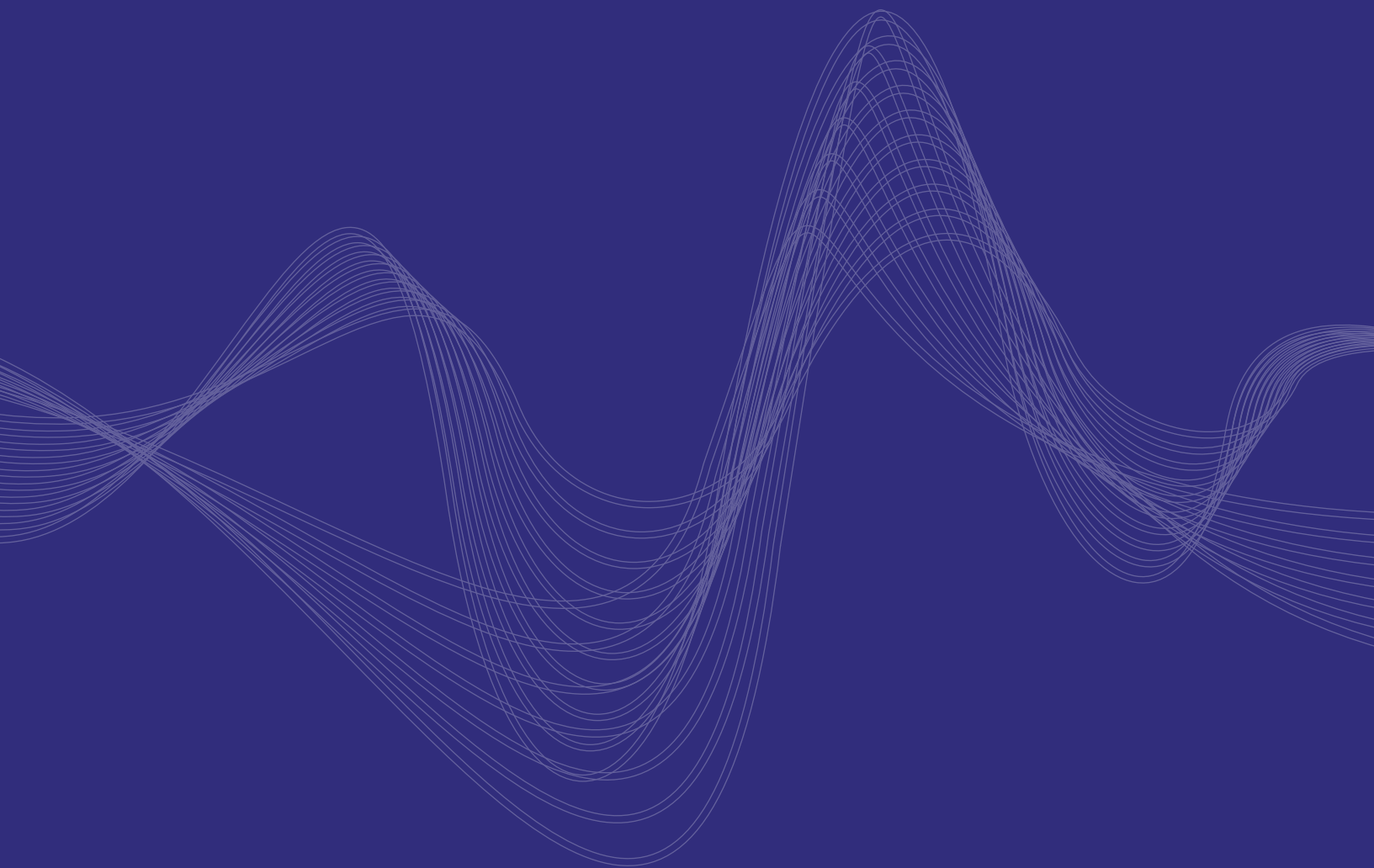


SPECTRA

Scalable, Multi-Role, Rapidly Deployable COMINT System





Single or Multi-Operator collection system

OVERVIEW

SPECTRA is designed for tactical or strategic signals intelligence roles. **SPECTRA** is a SIGINT collection system for fixed site or mobile radio communications monitoring.

The system is modular, and is designed to be expandable. **SPECTRA** can be used as a stand-alone system with a single operator, or as part of a networked infrastructure. It may be operated locally or over remote network links.

RECEIVERS

The **SPECTRA** system uses dedicated HF and V/UHF receivers for high performance. A mix of narrowband and wideband receivers can be dynamically configured to meet mission objectives. Search, survey and drop receivers can be assigned.

SPECTRA can also operate with compatible 3rd party receivers.

CAPABILITY

SPECTRA provides an RF survey and collection capability, operating from 2 MHz - 6 GHz.

The system is based around adaptable software and modular hardware. **SPECTRA** is a scalable system for multi-role radio monitoring, including force protection missions.

SPECTRA is designed to be adaptable and rapidly deployable.

RECORDING

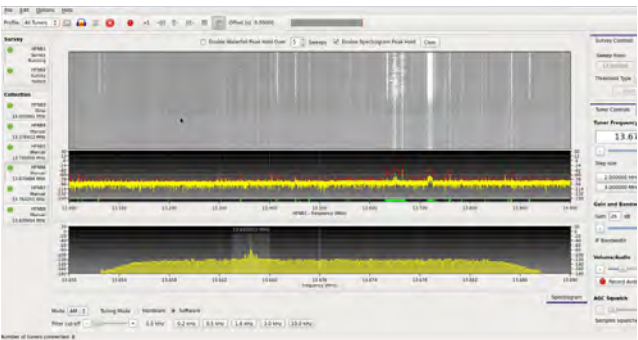
Extensive signal buffering allows operators to simultaneously access current and previous events recorded many hours earlier.

The system can record digital I/Q data, and audio for further analysis off line.

SOFTWARE

The **SPECTRA** system runs GIST, a modular radio monitoring software platform. GIST is designed to be expandable to work with software plug-ins allowing specific functions, or hosting customer-furnished applications.

GIST software runs on a network server allowing multiple client operators to connect to the **SPECTRA** system simultaneously.



GIST Operator Interface



Networked Operation

OVERVIEW

SPECTRA can be used to build up a larger, networked infrastructure of RF intercept equipment.

SPECTRA is a critical ISTAR asset, suited for fixed site and mobile applications.

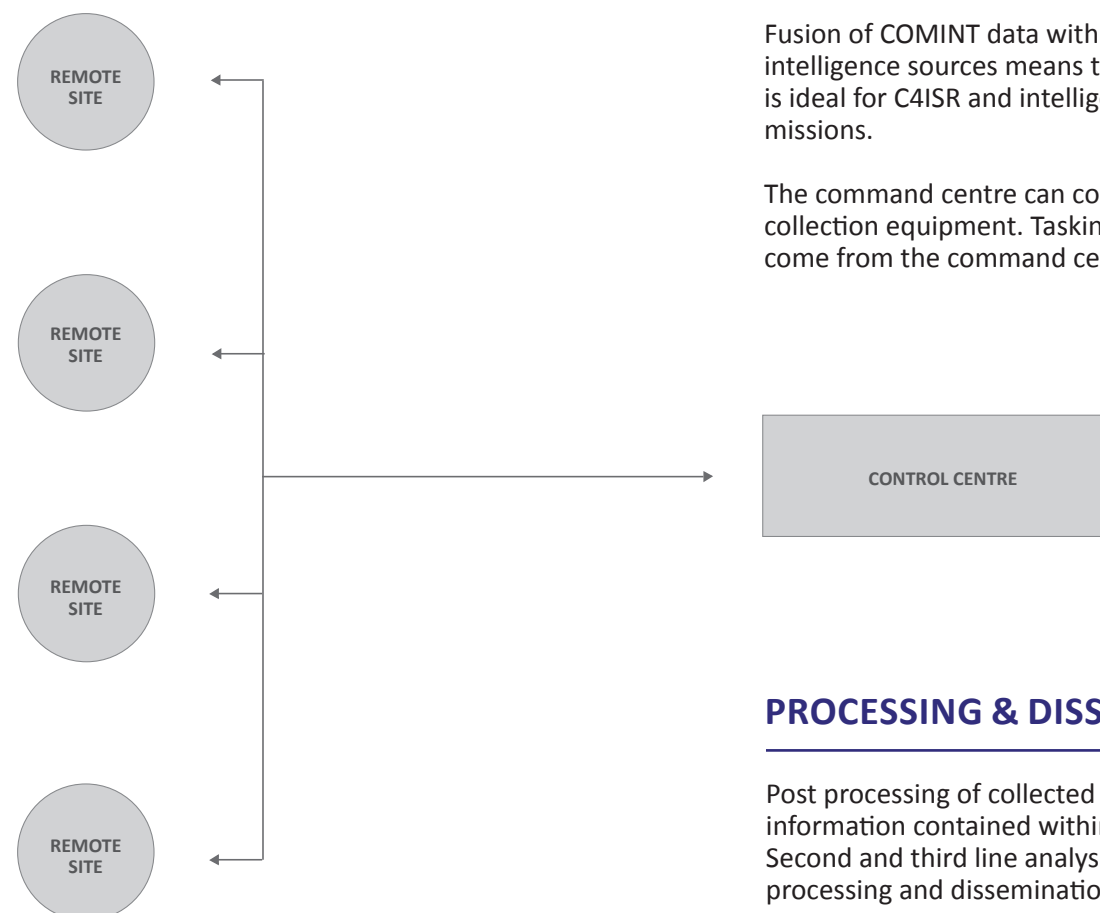
Networking between **SPECTRA** sites allows a reach-back and reach-forward capability.

TASKING

System tasking can be fed from the command centre to remote collection sites. Systems are configured according to target signal sets for the specific mission requirement.

COLLECTION

Remote collection sites pass recorded data over encrypted IP network links. Spectrum data is recorded as raw I/Q data. The collected data can be supplied back to the command centre for further analysis offline.



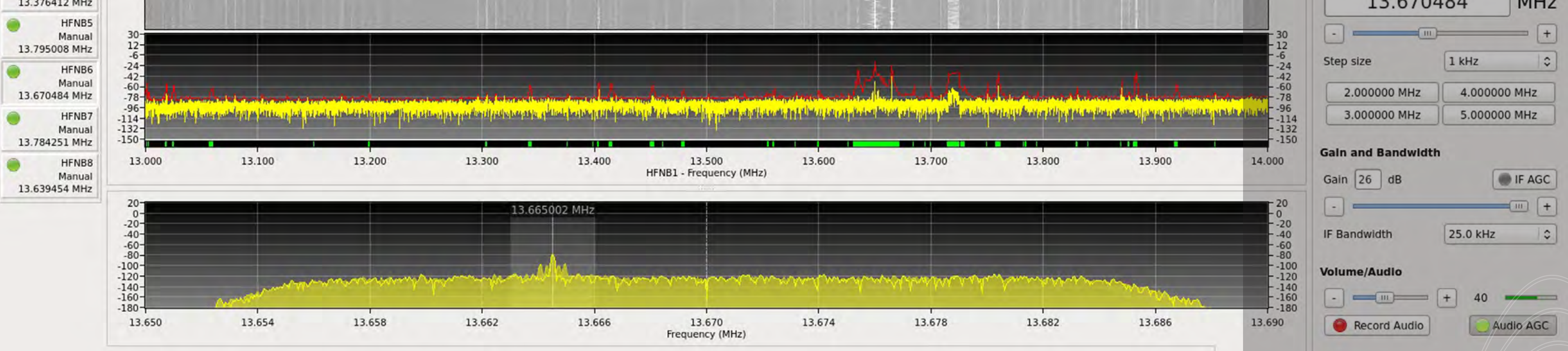
CONTROL CENTRE

Fusion of COMINT data with other intelligence sources means that **SPECTRA** is ideal for C4ISR and intelligence led missions.

The command centre can control remote collection equipment. Tasking controls may come from the command centre.

PROCESSING & DISSEMINATION

Post processing of collected data yields crucial information contained within collected signals. Second and third line analysis completes the processing and dissemination stage.



Software

OVERVIEW

SPECTRA runs GIST, and CommsAudit’s radio monitoring software package for control and operation of receivers and associated equipment.

Designed for multi operator, networked operation, GIST is a capable and versatile system for a wide range of applications.

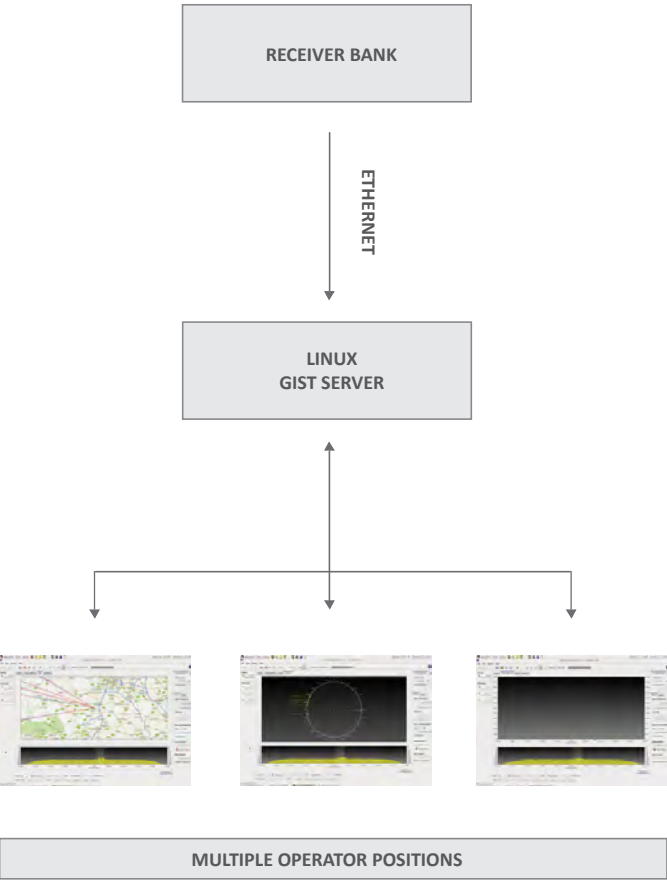
USER INTERFACE

SPECTRA has a highly intuitive user interface (GUI). The operator GUI has been specifically designed for SIGINT operators and analysts.

SERVER CLIENT ARCHITECTURE

SPECTRA is based on a server-client architecture.

Receiver hardware is connected a LINUX GIST server via Ethernet. Multiple clients (Windows® or LINUX) may connect to the GIST server.



KEY FEATURES

- High Probability of Intercept
- Automatic Search & Tuner Tasking
- Hardware Resource Allocation Management
- Spectrum Visualisation
- Integrated Demodulation
- I/Q and Audio Recording/Playback
- Software Defined Audio Routing Matrix
- Long Duration Continuous Buffering
- Intuitive Interface
- Database
- LINUX Server
- LINUX or Windows® Client



Receivers - HF - V/UHF

OVERVIEW

SPECTRA can be populated with a number of receivers to suit mission requirements.

SPECTRA uses dedicated HF and V/UHF receivers. Digital data streams are routed to the **SPECTRA** server for processing. The server based architecture allows rapid dynamic receiver hardware assignment between operators and analysts.



4-Channel HF Receiver

HF

SPECTRA uses wideband and narrowband receivers ensuring high probability of intercept under all spectrum conditions.

High dynamic range, excellent blocking performance, and superior sensitivity are key system parameters for leading edge intercept systems.

V/UHF

SPECTRA utilises high performance wideband receivers to cover 20 MHz - 6 GHz with a real-time analysis bandwidth of 100 MHz.

The large real-time analysis bandwidth ensures high probability of intercept for current and future signal sets.

SPECIFICATIONS

HF Narrowband	
Frequency Range	2 MHz - 30 MHz
Bandwidth	25 kHz

HF Wideband	
Frequency Range	2 MHz - 30 MHz
Bandwidth	28 MHz

V/UHF Wideband	
Frequency Range	20 MHz - 6 GHz
Bandwidth	100 MHz

Integrated Antenna Distribution

VERSATILE

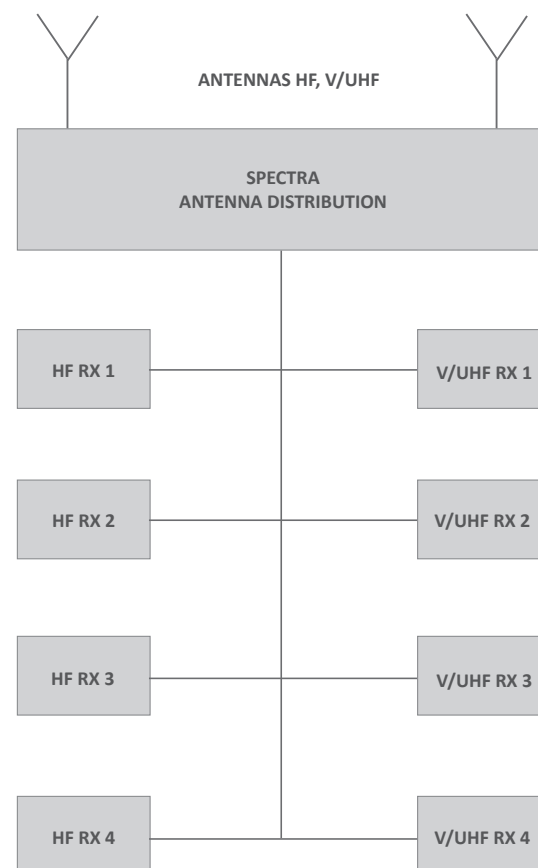
SPECTRA is a complete communications intercept system. Integrated within the system is a dedicated high performance antenna distribution unit. The antenna distribution unit supplies signals from antennas to multiple receivers within the **SPECTRA** system.

Options are available to accommodate all combinations of antennas & receiver outputs.

PERFORMANCE

The antenna distribution unit supplies all the receivers within the system with signal feeds from the available antennas.

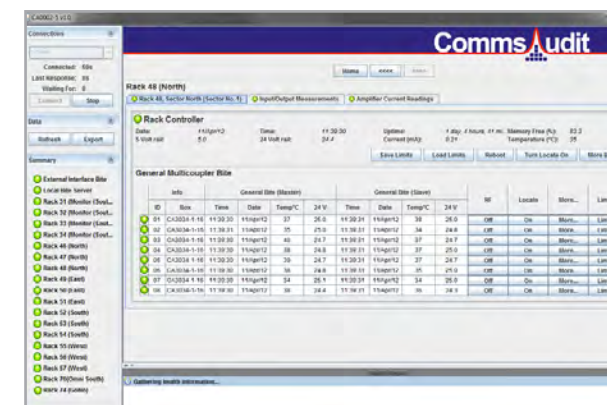
High performance RF design with high IP2, IP3, 1 dB compression point, and low noise figure ensure signal integrity is maintained throughout the system.



BITE

A comprehensive BITE facility enhances command confidence through real time system status monitoring.

BITE logs can be used to initiate planned preventative work ensuring continued system operation with minimal downtime.



Hardware Management Software Tool



Capability Expansion Options

OVERVIEW

SPECTRA is a system designed to be flexible, expandable, and affordable. The system can be configured with options to increase, or decrease system capability as required.

DIRECTION FINDING

SPECTRA optionally has integrated DF capability to enhance intelligence quality. Direction finding and GEO-location of targets improves situational awareness.

ADDITIONAL SOFTWARE

SPECTRA can be used in conjunction with customer furnished signal processing software.

The layered software architecture provides users with an easy pathway to increased capability.

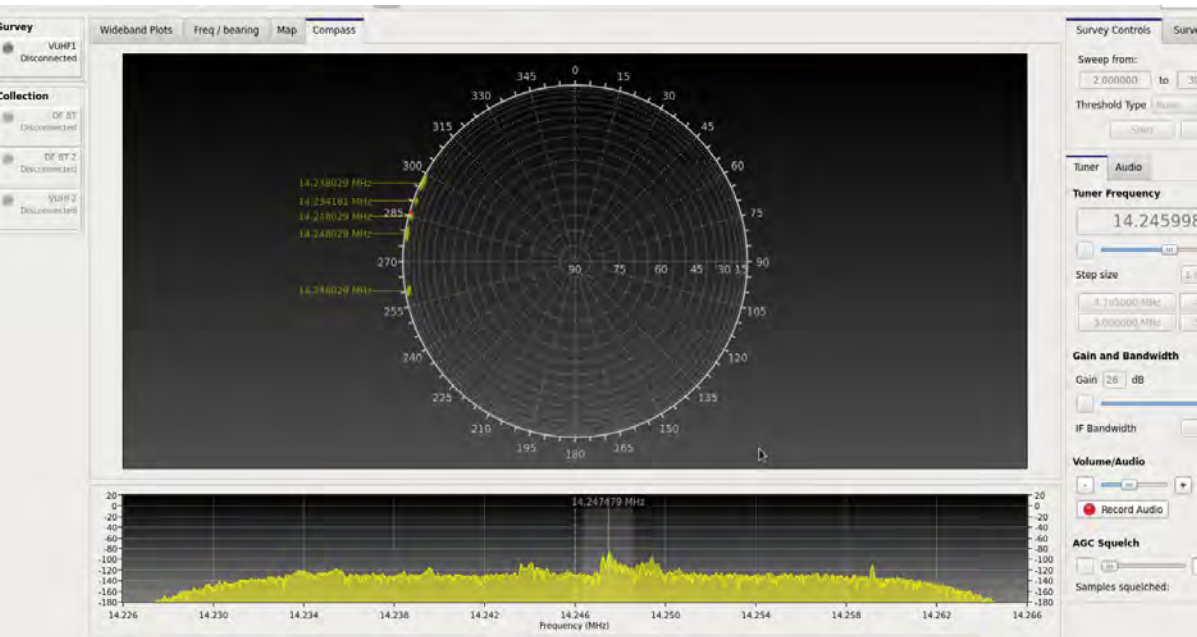
ADDITIONAL RECEIVERS

SPECTRA can host multiple receivers. Additional receivers may be integrated with the system depending on mission & capability requirements.

SPECTRA can interface to all CommsAudit receivers and compatible 3rd party receivers.

ULTRA-WIDEBAND ANTENNAS

SPECTRA can be used with CA9057-1, or with CA9067-2 Ultra-Wideband Antennas. Operationally proven, high performance omni-directional radio monitoring antennas.



SPECTRA DF Operator Interface



Training

OVERVIEW

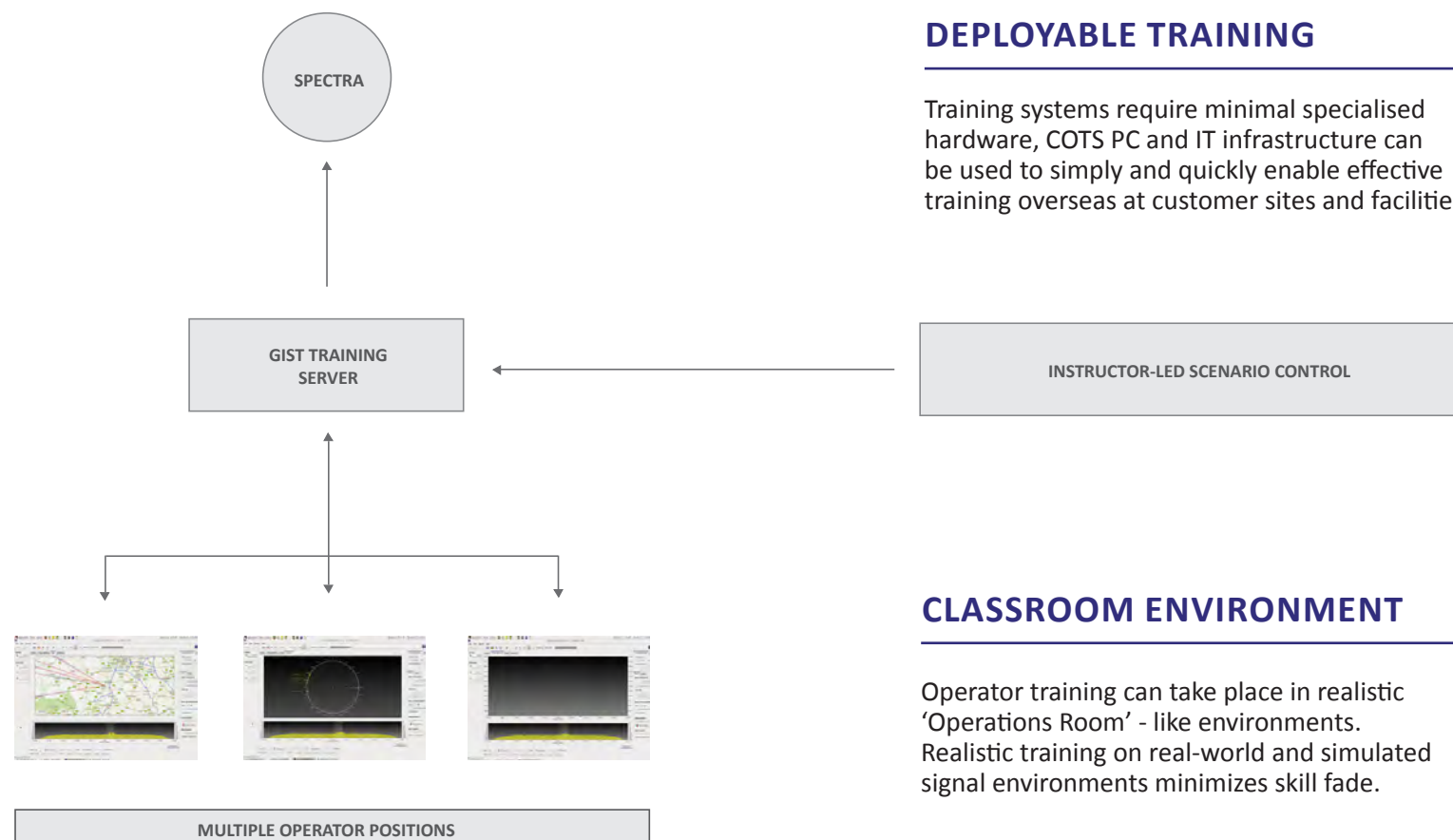
The operator interface for **SPECTRA** is GIST. GIST software can also be used for training operators for COMINT missions.

A typical training system architecture is shown opposite. Software based training minimizes costly hardware requirements, whilst retaining the ability to use remote systems for real-world training.

REAL WORLD COMPLEXITY

When used as a training environment, the system allows recorded signals and live signals to be analysed 'off-air'.

Real live signals from an operational environment can be supplied to the system with a network link to provide the greatest level of training reality.



DEPLOYABLE TRAINING

Training systems require minimal specialised hardware, COTS PC and IT infrastructure can be used to simply and quickly enable effective training overseas at customer sites and facilities.

CLASSROOM ENVIRONMENT

Operator training can take place in realistic 'Operations Room' - like environments. Realistic training on real-world and simulated signal environments minimizes skill fade.

CommsAudit

About us

Communications Audit UK Ltd (CommsAudit) is a UK-based electronics engineering company. CommsAudit specialises in meeting the needs of government, defence and national security. We have over 25 years experience producing market leading RF technology for critical missions and applications.

Our Capability

CommsAudit develops and manufactures technologically advanced products including: antennas, antenna distribution systems, receivers, HF-V/UHF collection systems and signal processing software. CommsAudit has an extremely capable and agile engineering team, supported by rapid manufacturing and test capability.

Key Products & Technology

- Receivers HF & V/UHF
- Super Resolution Direction Finding
- Antenna Distribution Systems
- Smart Infrastructure Systems
- COMINT & SIGINT Systems
- ITAR Free

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Published August 2013