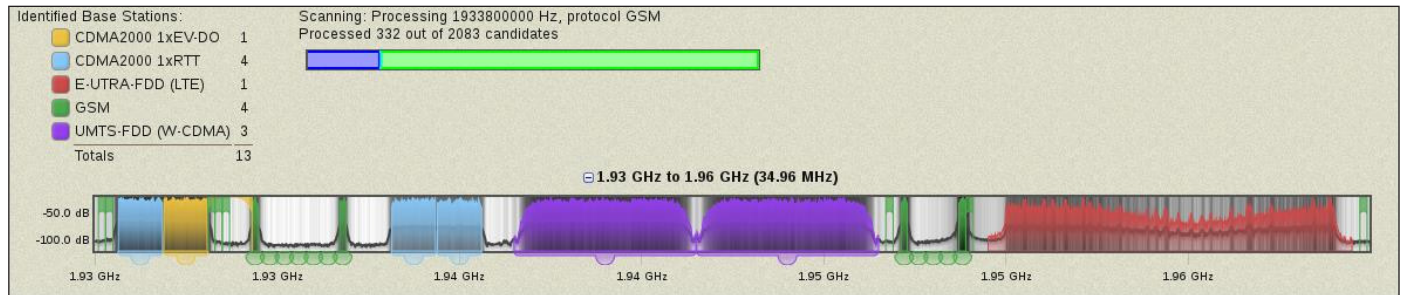# SNARE
Survey and Network Characterization Engine

SNARE is a software application that enables operators to rapidly visualize the wireless environment. The underlying survey engine for Spectral Sieve, base station router (BSR), and other U.S. Government systems, SNARE has been deployed globally on numerous ground and airborne platforms. With SNARE, operators can analyze networks of interest, export results to other applications, and configure equipment based on mission need. The technology combines powerful software-defined protocol processing libraries with CACI's expertise in high-level analysis, visualization, and real-time intelligent hardware control. In addition to enabling extensive wireless survey measurement for a wide breadth of signals, SNARE also incorporates several powerful features to visualize and analyze this information. Operators also have the flexibility to use familiar commercial off-the-shelf (COTS) and government off-the-shelf (GOTS) tools to augment SNARE's built-in analysis capabilities and leverage the depth of information collected across multiple systems.

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For more information about our expertise and technology, visit:
www.caci.com

Key Features

- Technology readiness level (TRL) 9
- Diverse signal set support
  - Commercial cellular, digital push to talk (PTT), counter-unmanned aircraft systems (C-UAS), and others
- Wide range of supported inputs and platforms
  - COTS and custom radios or file input
- Export results to a wide range of formats and share with other tools
- Intuitive web-based graphical user interface (GUI)

- Annotated spectral display and live spectrum analyzer
- Long-term scanning history analysis
- Integrated mapping support
- Supports operation over high-latency, low-bandwidth beyond line of sight (BLOS) links
- Opportunistic network and traffic analysis
- Multi-antenna processing
  - Direction finding, null steering, diversity receiver (RX), multiple-input and multiple-output (MIMO)
- Integrated antenna rotator control scheduling

- Network application programming interface (API) for application control and export interfaces, enabling BSR autoconfiguration and system integration
- Supports operation in stationary, mobile, fixed terrestrial, airborne, long standoff, and denied areas
- Runs on laptops, desktops, servers, VPX chassis, and custom platforms
  - Deployable on CentOS™/RHEL 7, macOS® 10.14+, and Docker™/ VM hosts

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Benefits

- Enables rapid wireless survey and network characterization, helping operators more effectively visualize wireless environments

- Performs drive test, coverage mapping, and geolocation based on changing mission needs

- BSR autoconfiguration and passive collection tasking enhances analysis

- Optimal for situational awareness, force protection, and counterintelligence operations

License Options

Multiple software license options are available and grouped in bundles of related signal sets (such as cellular, PTT, and others), or as a total signal bundle that includes all supported technologies. All licenses include one year of support, and can be deployed across several different mechanisms such as hardware-locked, floating, cloud-based, and authentication tokens. Kit options are also available which include a software license, processing platform, software-defined radio (SDR), and other supporting tools. Training packages are also available and include instruction on application usage and configuration.

Specifications

Wireless Technologies

Commercial cellular	5G NR, LTE-FDD/TDD, W-CDMA, TD-SCDMA, GSM, CDMA2000 1xRTT/EvDO, Mobile/Fixed WiMAX
Digital PTT	DMR (ETSI 102 361, T1/2/3), MPT-1327, NXDN, P25, TETRA
UAS command and control (C2)/data	Lightbridge, RMILEC, DragonLink, Futaba, OcuSync
Others	802.11 WiFi, LoRaWAN, generic energy detection/modulation ID

Radios and File Inputs

COTS radios	Ettus Research™ USRP™ N2x0/B2x0/X3x0, Silver Palm SP8304/8309, Epiq Solutions Sidekiq™ (mPCIe/M.2/2280/X4), Herrick HTLx (10 GbE), NGC X1/X10
CACI solutions	GEMINI, DRACO, Pit Viper, CICADA™, Spectral Sieve, BEAM™, ARES, Kraken™, Dreaded Tuna, DoubleDown
Local files	Raw IQ, VITA49/VRT, MIDAS BLUE
Standards compatibility	VITA 49.2, VICTORY, MORA

Survey Result Export Formats

Reporting	CSV, Microsoft Excel® XML, KMZ (for GIS)
Sensor fusion	ROVER™ Generic Drive Test (GNS) and Generic ICD (live streaming), Cursor on Target (CoT)
Enterprise Ingest	NOISYWSTL (binary and JSON)

Example Platforms

CACI can provide several options (e.g. GEMINI, DRACO, Pit Viper) for an all-in-one, multi-receiver platform that hosts both the radios and the SNARE survey application. Users can connect to the web-based GUI via panel-mounted Ethernet or optionally available WiFi.

SNARE backpack kits include a radio, high-performance laptop, antennas, cables, battery, adapters, and tools packaged in a rugged shipping case with a backpack for inconspicuous transport. Customizations available.

VPX chassis integration options support a range of COTS GPP and custom or COTS radios with VITA49/VRT over 10 GbE backplane or PCIe with custom drivers.

Low size, weight, and power (SWaP) embedded use cases (mod payload, DoubleDown, etc.)

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CACI's approximately 22,000 talented employees are vigilant in providing the unique expertise and distinctive technology that address our customers' greatest enterprise and mission challenges. Our culture of good character, innovation, and excellence drives our success and earns us recognition as a *Fortune* World's Most Admired Company. As a member of the *Fortune* 500 Largest Companies, the Russell 1000 Index, and the S&P MidCap 400 Index, we consistently deliver strong shareholder value. Visit us at www.caci.com.