



## Our People = Our Strength

RAS personnel work closely with each customer to define operational requirements, establish achievable programs, perform design tradeoffs, and then develop and test the end-item. RAS combines a top-down systems approach with bottoms-up integration and test.

**Skilled Personnel** – RAS technical personnel are experienced with many holding advanced engineering degrees. We also have access to Subject Matter Experts and world-class consultants in sensors, signals, cyber, software radios, and machine-learning / artificial intelligence.

**Rigor and Flexibility** – RAS provides thorough analysis and assessments of systems and concepts for the DoD. We strive to document and deliver to testable requirements. We have rapid prototyping and Quick Reaction Capabilities and are able to respond rapidly to customer needs.

**Broad Involvement** – The RAS team has a broad background in systems engineering, algorithms, firmware and software development, modern signal analysis, and feature extraction. Our Staff has experience with a myriad of DoD and intelligence platforms. We have worked with primes and mid-tier contractors to insert technology into their applications as well directly to the government.

## Who We Are

### About RAS

Research Associates of Syracuse (RAS) is a small business located within the Griffiss Technology Park in Rome, NY. Founded in 1986, RAS has developed and assessed new concepts for Electronic Intelligence (ELINT), Electronic Support (ES), and Specific Emitter Identification & Tracking (SEI/SET) systems and processing techniques for over 30 years. RAS has contracted with multiple organizations including all DoD branches, various agencies, several primes and mid-tier companies and maintains strategical alignments with several of them. We provide quality engineering analyses and products for ELINT, EW, and other initiatives. RAS is highly experienced in algorithm, software, and firmware development for signal detection, pulse feature measurement, automatic modulation recognition, LPI/ LPD, and real-time EW signal processing including clustering, emitter identification, SEI, and SET as well as Combat ID.

### Contact Us

Phone: 315-339-4800  
FAX: 315-339-8870  
Email: [contact@ras.com](mailto:contact@ras.com)

Brian Moore President/Technical Director  
Stan Hall VP, Contracts  
Dennis Stadelman Chief Scientist



**RESEARCH ASSOCIATES  
OF SYRACUSE, INC.**

111 Dart Circle  
Rome, NY 13441

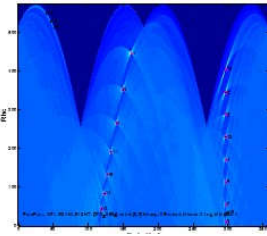
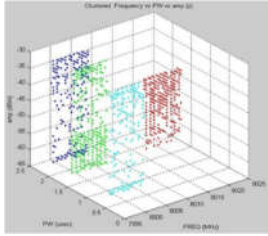


## RAS

***Bringing Electronic Warfare and Electronic / Signals Intelligence together for the Warfighter***

### RESEARCH ASSOCIATES OF SYRACUSE, INC.

- *Electronic Warfare and Electronic / Signals Intelligence Analysis and Development*
- *Advanced technology development company with an emphasis on EW processing and analysis*



## Mission Statement

*Solve technically challenging problems on behalf of our customers while providing a challenging and rewarding work environment for our employees*

## Core Strengths

- Electronic Warfare (EW) Signal Processing
  - Electronic Support (ES)
  - Electronic Intelligence (ELINT)
  - Electronic Attack (EA)
- Digital Receiver Architectures and Firmware
- Signal Detection, Characterization, and ID
- Cognitive Reasoning/Machine Learning for EW
- Advanced Waveform Processing
  - Intentional Modulation on Pulse (IMOP) – Automatic ID & Characterization
  - Specific Emitter ID, Track, and Feature Extraction (SEI, SET, SEF) / Combat ID
  - Low Probability of Intercept (LPI) / Wideband (WB) Signal Detection and Measurement
  - Interference Characterization and Mitigation
- High Fidelity Waveform Generation and Scenario Development

## Other Services

RAS provides a number of unique services to our customers based upon the enabling talents and experiences of our personnel, including:

- Impartial system evaluations and assessments
- Electronic Warfare (EW) performance analysis for airborne, naval, and ground-based systems
- Systems engineering, firmware, algorithm, and software development and test
  - Signal detection, characterization, and de-interleaving and identification algorithms
  - Precision pulse parameter measurements
- Software Defined Radio (SDR) and Counter-sUAV prototyping
- Data collections for challenging multi-agile emitters; contributed to National ELINT DBs
- Training and continuing education courses in radar, EW, ELINT, and digital signal processing

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*Changing the way we listen,  
gather, and react to signals*

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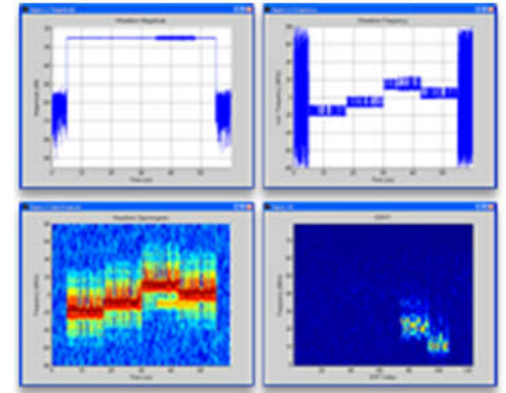
## Key Government Contracts

RAS has a proven track record developing and implementing innovative solutions to stressing technical problems. Key Small Business Innovation Research (SBIR), Broad Agency Announcement (BAA), and other R&D contracts include:

### Phase II / Phase II Plus

- **Navy** (NAVSEA) – Cognitive Reasoner for Electronic Warfare Systems (CREWS)
- **Navy** (NAVSEA) – Characterizing Interleaved Pulse Trains with Complex Modulations (CHIP)
- **Navy** (NAVSEA) – Multi-Algorithm Unique Emitter Identification (MAUEI)

- **AFRL** (Robins) – Common Operational SEI for Sustained EW Systems (COMOPS)
- **Navy** (NAVSEA) – Automated RF Spectrum Management for Wideband EW Systems
- **Navy** (NAVSEA) – Precision Feature Extraction Preprocessor (ES-PFEP)
- **Navy** (NAVSEA) – Processing Signals in High Density Electromagnetic Environments (including Interference Mitigation)
- **AFRL** (Dayton) – Hardware-Based Broadband Ultra-High Speed Digital Signal Processor
- **Army** (AMRDEC) – Advanced Detection Techniques for Altimeters (ALPIP)



### Phase III / BAA / Production

- **Navy** (NAVSEA) – MAUEI Rapid Innovation Funds
- **AFRL** (Rome) – ELINT Signal Information Exploitation (ELSIE)
- **Navy** (NAVAIR) – F-18 Studies (ES-PFEP)
- **Army** (AMRDEC / LMCO) – Common ESM Sensor for Air Defense (CESAD) / SET
- **Army** (AMRDEC) – LPI Waveform Exploitation
- **Navy** (NAVSEA / GD / LMCO) – High-Gain, High-Sense (HGHS)
- **AFRL** (Rome) – Signal Intelligence for Real-Time Applications (SIRTA)