

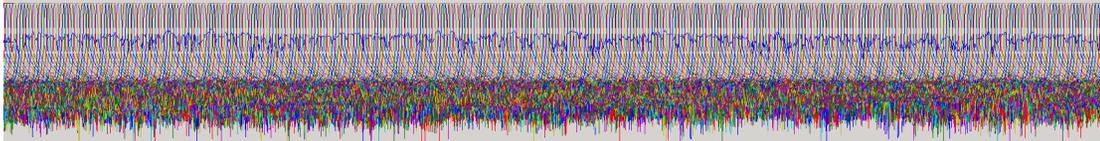


**SPATIAL &  
SPECTRAL  
RESEARCH**

$$= \iint \delta R$$

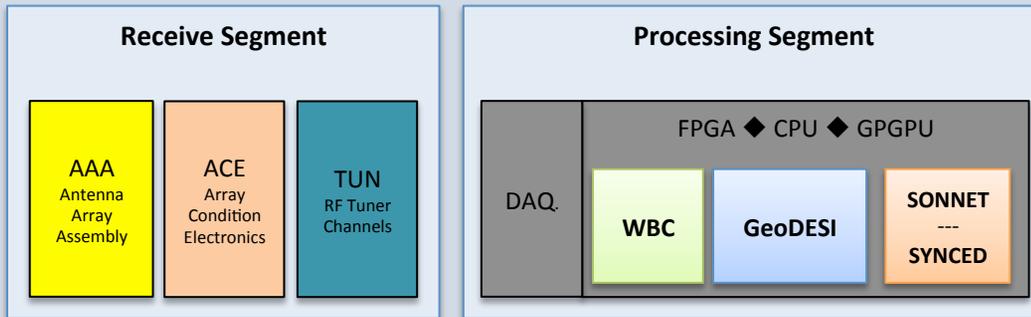
- Located in Bedford, New Hampshire
- DUNS: 828467816 / CAGE: 57SD7
- Registered in NH in 2008 as an LLC
- Transitioned to S-Corp in 2014
- DSS – DD-254 (TS-FCL, MAY-2014)
- DCAA – APR-2014
- DCMA – MAY-2014
- DD-2345 – 2014

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### Signal Processing and Analysis

- Point of collection detection, identification, processing
- Real-time anomaly detection, object identification, processing



### Tactical Communications

- Novel Approaches for bandwidth-restricted environments
- Compression and CODECs

- System Architecture & Implementation
- ES, EA, SI, IM, MA
- Airborne, Ground, Littoral, Maritime
- Hardware • Software • Firmware • Algorithms
- Recovery • Detection • Localization
- Direction Finding • Geolocation • Analysis

### Wideband Channelizer (WBC) – Analysis

- Streaming FPGA implementation (Xilinx Kintex-7 XC7K410T),
- Near-real-time examination of wide RF expanses,
- Excise cooperative and non-cooperative interference,
- Extract threat signal internals for analysis and exploitation, and
- Assess channel availability for cooperative COMMs.

### GeoDESI – Geolocation, Direction Estimation, and Streaming Imagery

- Cross-cuing SIGINT-IMINT (XQ-SI-IM) system,
- Scalable CAGEs for Mission Objectives and SWaP,
- CAGE – Channelized AOA, GEO, and Electronic beamsteering,
- Multiple CAGEs – General search in CPU, GPGPU, FPGA,
- Single CAGE – Directed search in a single FPGA
- Secure, Wireless, TNG JICD v4.x capable, and
- Currently TRL-6 (ground-mobile) and TRL-5 (airborne, light-aircraft)

### Self-Organizing Neural Net (SONNET) Signal Recognizer

- Automatic and Adaptive Genetic-based Algorithm,
- Co-channel, Co-frequency Interference Mitigation,
- CPU and GPGPU implementation

### Syndrome Compression, Encryption, and Decompression (SYNCED)

- Streaming FPGA implementation (Xilinx Kintex-7 XC7K410T),
- Real-time compression, encryption, and decompression,
- Lossy or loss-less, and
- On-the-fly reconfigurable.