SCIENTIFIC RESEARCH CORPORATION

Cyber Capabilities

Dr. Mark D.J. Brown

Vice President

Simulation, Test, and Instrumentation Division

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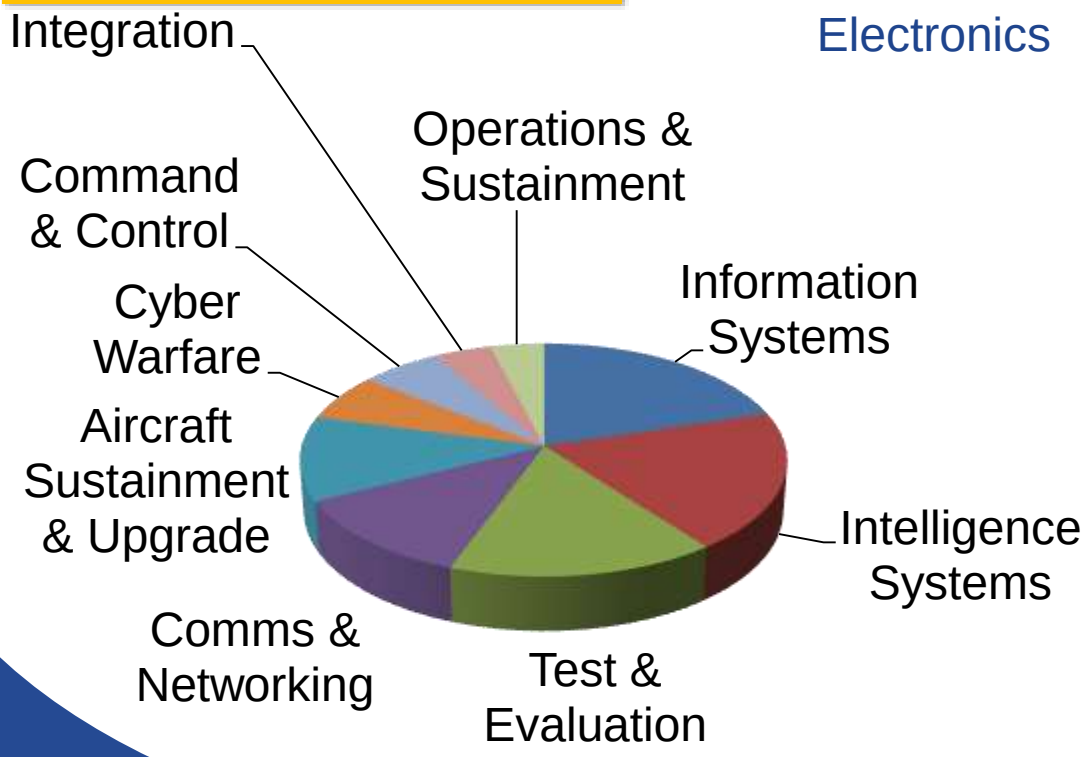
Updated June 2015

Corporate Overview

Major Divisions

- ISS – Integrated Systems & Solutions
- STI – Simulation, Test, & Instrumentation
- CNE – Communications, Networks, & Electronics

% of Revenue by Core Capability



- **2014 Revenues $320M**
- **~1,200 Personnel**
- **Privately Held**

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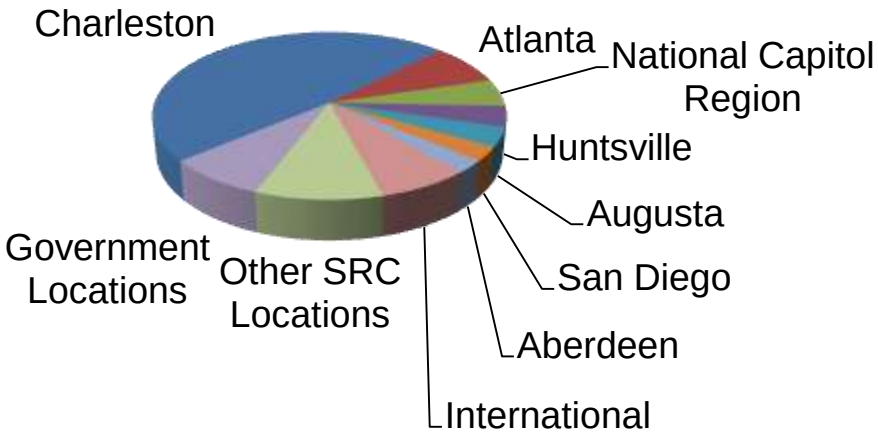
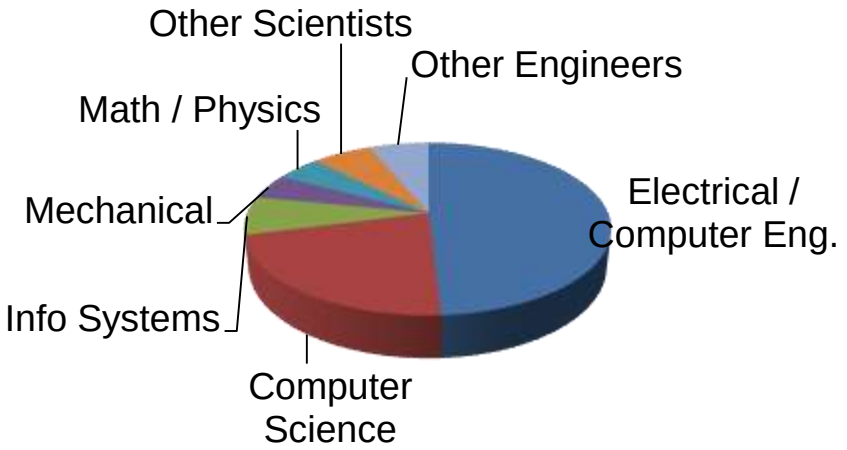
Personnel Overview

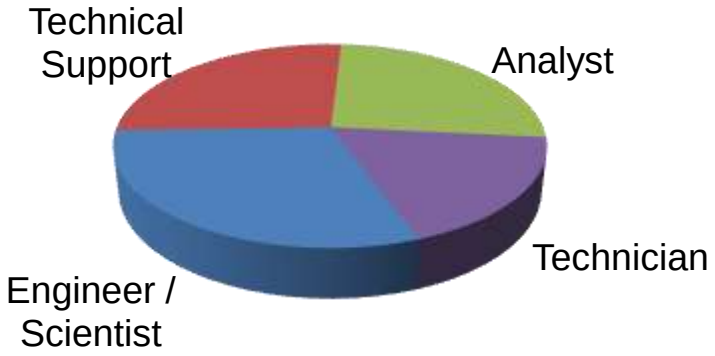
Staff by Location



Engineer / Scientist Staff



Technical Staff by Function



Total Staff

- ~1,200 employees
- 81% hold security clearances
- 52% hold Top Secret or TS/SCI

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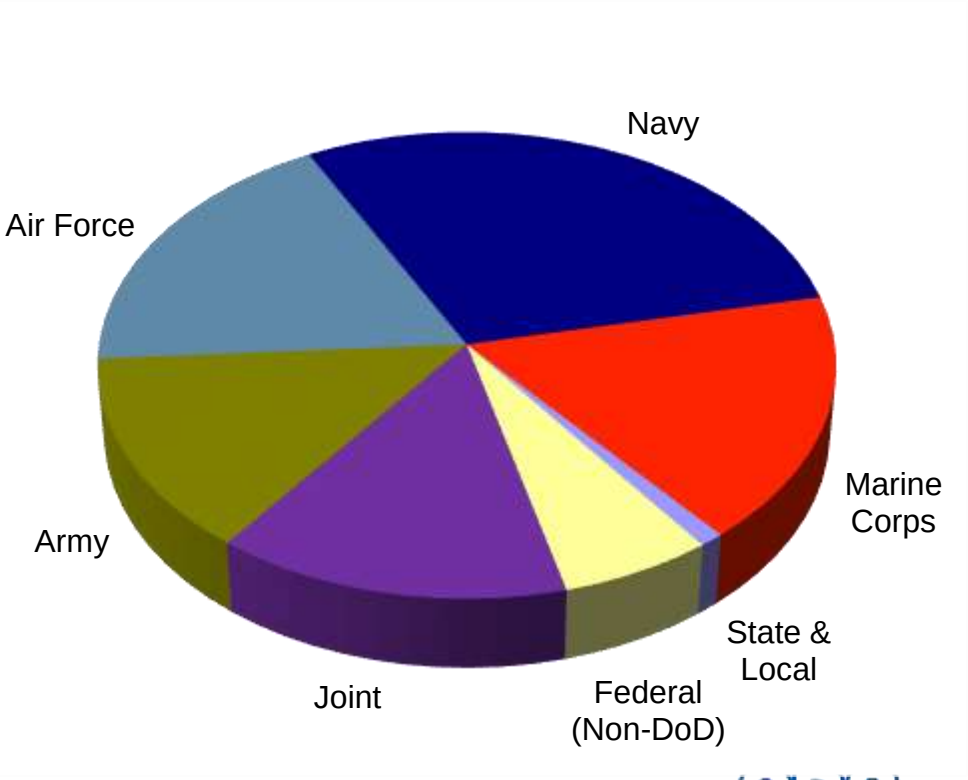
Revenue by Customer

- Customer diversity
- Many capabilities leveraged between customers



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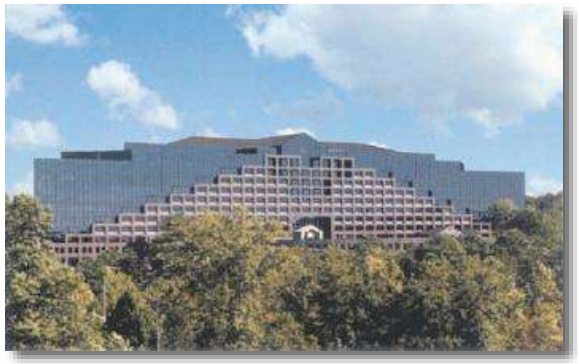
Corporate Locations

Principal Offices

Charleston, SC
ISS Division



Atlanta, GA
Corporate Headquarters & CNE Division

Huntsville, AL
STI Division

Field Locations

Antarctica
Eglin AFB, FL
Ft. Gordon, GA
Ft. Belvoir, VA
Honolulu, HI
Nellis AFB, NV
Norfolk, VA
Peterson AFB, CO

SRC Offices

Aberdeen, MD
Arlington, VA
Augusta, GA
Chesapeake, VA
Columbia, MD
Dayton, OH
New Orleans, LA
San Diego, CA
Tampa, FL
Warner Robins, GA

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ISS Division Overview

- Analysis, development, production, installation and full life cycle support
- Real-time software development
- Network and production engineering
- System automation and integration
- Digital signal processing
- Logistical support services
- Support to the Antarctica Program

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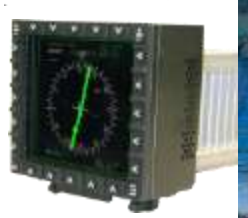
CNE Division Overview

- Providing custom research, design, development, systems integration and deployment and support services
- Providing communications and networking systems research, design and development
- Providing technology insertion for aging and end-of-life military logistics and test systems
- Providing engineering, integration and deployment and support services for communications and networking systems



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STI Division Overview

- Providing engineering solutions for surveillance, radar, cyber, EW and instrumentation systems
- Developing advanced sensor system products
- Providing interoperability test and evaluation services
- Providing timely and cost effective solutions for the warfighter
- Leading multiple ongoing Joint Test and Evaluation programs

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Cyber Overview

What is Cyber?

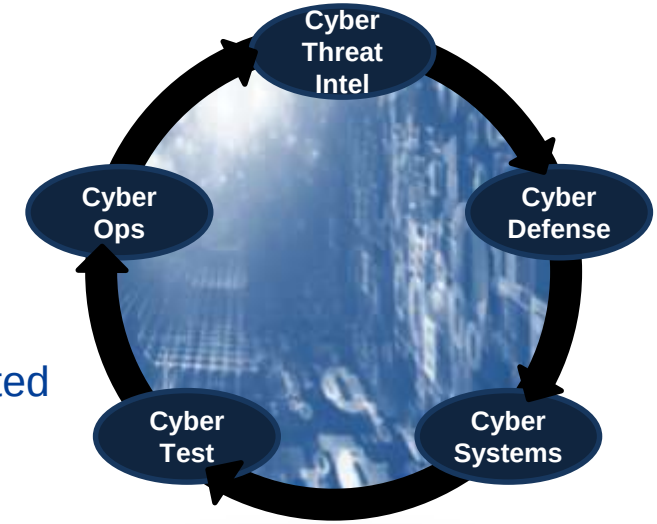
According to JP 1-02 DOD: Dictionary of Military and Associated Terms:

- **Cyberspace**
  - A global domain within the information environment consisting of the interdependent network of information technology infrastructures, including the Internet, telecommunications networks, computer systems, and embedded processors and controllers.
- **Cyberspace Operations**
  - The employment of cyberspace capabilities where the primary purpose is to achieve military objectives or effects in or through cyberspace.

In simpler terms, Cyber is anything that can gather, transmit, store or process electronic data.

Elements of Cyber

Our view encompasses 5 elements of cyber:



- Cyber Operations
  - How we use cyber space to gather, transmit, store, and process data
  - Includes offensive cyber operations
- Cyber Defense
  - How we protect our systems using both automated and manual systems as well as certification and accreditation processes.
  - Includes defensive cyber operations and cyber maneuver
- Cyber Test
  - How we create the environments, processes, policies and procedures to evaluate cyber capabilities and then the actual conduct of those evaluations
- Cyber Intelligence
  - Underpins all other elements. How we determine what the threats are to our systems and how vulnerabilities are exploited.
- Cyber Systems Development
  - Creating the tools required for Cyber Ops, Cyber Defense

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SRC's STI Division Cyber Overview

- **STI Cyber Customers include:**
  - OSD Test Resource Management Center (TRMC) (Cyber Ops, Cyber Test)
  - Program Executive Office for Simulation Training, and Instrumentation (PEO STRI) Threat System Management Office (TSMO) (Cyber Ops, Cyber Test)
  - Defense Intelligence Agency (DIA) Missile and Space Intelligence Center (MSIC) (Cyber Test, Cyber Intel)
  - Director of Operational Test and Evaluation (DOT&E) (Cyber Ops, Cyber Defense, Cyber Test, Cyber Intel)
  - DoD Chief Information Officer (CIO) (Cyber Ops, Cyber Defense)
  - USCYBERCOM (Cyber Ops, Cyber Defense)
  - USPACOM (Cyber Ops, Cyber Defense, Cyber Intel)
  - USTRANSCOM (Cyber Ops, Cyber Defense)
  - STRATCOM (Cyber Ops, Cyber Defense, Cyber Test, Cyber Intel)
  - 25th Air Force (Cyber Ops, Cyber Defense)

Test Capabilities Development (TCD)

Provide engineering support services for the OSD Test Resource Management Center (TRMC)

- **TRMC responsibilities include:**
  - **MRTFB Policy Oversight**
  - **Biennial 10 Year T&E Strategic Plan**
  - **Annual Certification of T&E Budget for Military Departments and DoD Agencies**
  - **T&E Workforce**
  - **Managing T&E Investment Programs**
    - *Central Test and Evaluation Investment Program (CTEIP)*
    - *Test & Evaluation/Science & Technology (T&E/S&T) Program*
    - *Joint Mission Environment Test Capability (JMETC) Program*
  - **Oversight of T&E Budgets and Infrastructure**
  - ***Oversight of National Cyber Range***
  - ***Cyber Test, Cyber Ops***

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TRMC Cyber Test Policy and National Cyber Range Support

- **Provide the TRMC with subject matter expertise to support development of appropriate infrastructure and ranges for cyber, interoperability, and distributed test and evaluation**
- **Assist TRMC in the formulation of cyber policy, planning, programming, execution management, and assessment of immediate cyber-related requirements and challenges**
- **Ongoing efforts include:**
  - Supporting development Cyber T&E Infrastructure Roadmap
  - Assisting in development and sustainment of new infrastructure capabilities to meet cybersecurity and IA requirements
  - Supporting on-going cyber/interoperability technology, including the National Cyber Range, to meet Cyber T&E infrastructure requirements
  - Assisting in the development of cyber T&E infrastructure standards

- ***Cyber Test, Cyber Ops***

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Threat Systems Management Office (TSMO) Cyber Operations Support

- Provide DOT&E with Cyber Range integration and assessment in support of Combatant Command exercises
- Facilitate Cyber Mission Force development through assessment at CYBERCOM and Combatant Command venues of:
  - Training and exercise use of cyber
  - Training curricula for cyber
  - Cyber range environments employed
  - Tools and capabilities utilized by Blue and Red
- Influence DOD Enterprise Cyber Range policy and investment to effectively support test and training
- Support integration of Cyber capabilities into the traditional modeling and simulation community
- Support convergence of Cyber and EW
- Support Cyber Protection Teams and TSMO Cyber Red Team
  - ***Cyber Ops and Cyber Test***

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Test and Evaluation Threat Resource Activity (TETRA)

- SRC Supports TETRA in executing its mission to:
  - Supports DOT&E staff on all matters related to threat resources
  - Provides on-site intelligence support to DOT&E Action Officers, specific to T&E
  - Represents DOT&E on a variety of Foreign Materiel Program groups, coordinating acquisitions to address T&E materiel shortfalls
  - Conducts independent threat representation validation oversight of Army, Navy, Marine, Air Force, and Intelligence Center processes
  - Maintains a database of threat resources
  - Serves as the Threat Systems Program Resource Manager
- SRC conducted a Classified Study to identify Cyber Threat shortfalls that must be addressed to support Cyber T&E
- Currently developing a Cyber Threat roadmap to identify gaps in Cyber Threat T&E infrastructure
  - ***Cyber Intel, Cyber Test***

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Joint Test and Evaluation Program

- Assess service system interoperability in joint operations
- Evaluate joint technical/operational concepts and recommend improvements
- Validate operational testing methodologies that have joint applications
- Improve modeling and simulation (M&S) validity with field exercise data
- Increase joint mission capability, using quantitative data for analysis
- Provide feedback to the acquisition and joint operations communities
- Improve joint Tactics, Techniques, and Procedures (TTP)
  - ***Cyber Ops, Cyber Defense, Cyber Test, Cyber Intel***

JT&E is Non-Acquisition Testing

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Example JT&E Cyber Programs

- Joint Rapid Attack Process (JRAP) Quick Reaction Test (QRT) IA Signoff
  - USSTRATCOM – Developed "use case" assessment Methodology for Cyber capabilities
  - *Cyber Ops, Cyber Defense*
- Joint Advanced Capability Employment (J-ACE) Joint Test
  - USSTRATCOM – Test "use case" methodology on advanced Cyber capabilities
  - *Cyber Ops, Cyber Defense*
- Rapid Development and Sustainment of Enterprise Mission Services (RDEMS) QRT
  - DoD Chief Information Officer (CIO) - Examine, validate, and document new processes and TTPs for information sharing to expand beyond the legacy cylindrical business models
  - *Cyber Ops, Cyber Defense*

Joint Electromagnetic Preparedness for Advanced Combat (JEPAC)

- Integrated Cyber Electronic Warfare (ICEW)
  - Emerging warfighting doctrine & employment
  - Holistic blend of cyber and EW capabilities to have a greater battlefield effect
  - Creates potential vulnerabilities that **cannot properly be accounted for/realized** using isolated cyber or isolated EW analysis/mitigation
- Counter-ICEW:
  - JEPAC effort to understand/mitigate potential vulnerabilities in US weapon systems to ICEW threat
- SRC provides support in the following areas:
  - Planning: development, management, and execution of tests/assessments
  - Advocacy: concept-development, academic instruction, and environment maturation
- ***Cyber Intel, Cyber Test, Cyber Defense***

"Future conflicts will be won in a new arena—that of the electromagnetic spectrum and cyberspace. We must merge, then master those realms."
– Admiral Jonathan W. Greenert, Chief of Naval Operations

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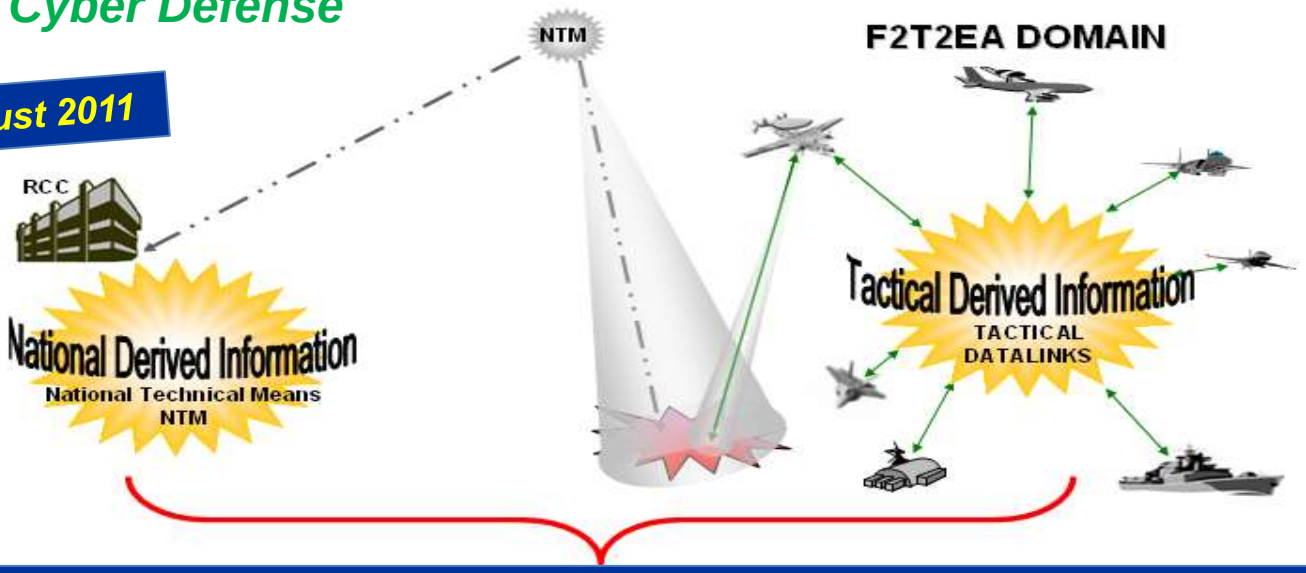
Digital Integration of Combat Effectiveness (DICE)

- 25th AF DICE Program - Joint Integration of Nationally Derived Information (JINDI)
- Enable the National Intelligence Community capability to provide real time tactical support to forward deployed forces via in-place networks. Fills tactical-level intelligence gaps and enhances situational awareness at all levels of military operations.
- ***Cyber Ops, Cyber Defense***

Operational August 2011



IMPACT: Provides useable "all-source" intelligence for tactical user.

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Our Commitment

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Providing Quality RDT&E Services and Products
On Time and Within Budget

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