



## SPARTA provides world-class technical products and services to the defense, intelligence, and homeland security sectors of the federal government.

Since SPARTA's inception in 1979, we applied the best intellectual talent to help solve major national challenges. We are an employee-owned company with over 1300 shareholders. Our talents and resources focus on challenges in eight strategic business areas: hardware, space, and tactical systems, homeland security, intelligence, missile defense, network centric warfare, and technical services.

### Missile Defense



SPARTA's Information Systems Security Operation (ISSO) solves hard information systems security problems in many of those business areas. We conduct fundamental and applied research. We design, and develop secure system architectures and technologies. We evaluate system and network security, apply security standards, and conduct security certification and accreditation. ISSO also manages programs throughout their life-cycle.

We are dedicated to serving our customers. We built a reputation with both the federal government and private industry for responsiveness, technological innovation, and excellence in the areas of systems engineering and security. ISSO has customers in the Intelligence Community and the Department of Defense, including Defense Advanced Research Projects Agency, Defense Information Systems Agency, Army, Navy, and Air Force. Our contracts also include those with Department of

### Intelligence



Energy, Department of Homeland Security, National Aeronautics and Space Administration, and other U.S. Government agencies. We team with companies and academic institutions of all sizes, gathering the best minds available to provide the best solution possible.

ISSO operates from locations in Alabama, Arizona, California, Colorado, Florida, Maryland, and Virginia.

We provide information assurance support in three focus areas:

- We support a wide variety of customer **programs**, design, develop, and integrate systems, and manage projects that provide our customers with information assurance capabilities;
- We provide **services**, advise, assist, and provide on-site engineering, and program management support within customer program offices and help them obtain and/or operate information assurance capabilities; and
- We research, transition, develop, implement, and integrate **technologies** to meet our customers' information assurance needs.

## Tactical Systems



### PROGRAMS AND SERVICES

In the first two focus areas, we perform similar functions for our customers, in different ways. The similarity lies in the result, helping our customers identify and satisfy their need for information assurance capabilities.

The main difference between them is our point of view. In the area of programs, we are an independent contractor operating outside the program office. In the area of services, we are an integral part of the program office.

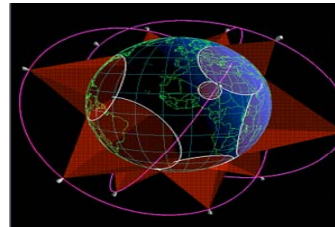
In those focus areas, we gather and manage requirements. We design systems. We develop concepts of operation. We prepare strategic, operational, and tactical plans. We manage programs and support acquisition. This includes

product evaluation, design support, life cycle and logistics support.

We protect critical infrastructure, detect intrusions, and track attack sources. We do this by analyzing and assessing system dependency, vulnerability, and security, and developing analytical algorithms and applications.

We support mobile e-mail, secure the mobile environment, and secure telephone distribution.

ISSO also analyses threats, prepares threat models, and develops graphics to represent those threats. We analyze systems, traffic, and networking communications to gather security requirements and evaluate security threats. We characterize, estimate, and quantify security threats, attacks, and vulnerabilities. ISSO



## Space Systems

prepares computer models and simulations to support analysis of threat scenarios and assess system security. We develop analytical applications and algorithms to probe systems and gather valuable data about potential vulnerabilities. In addition to vulnerability scanning, ISSO performs penetration testing and prepares documentation for system accreditation and certification.

ISSO performs red team reviews, data mining, and data reduction to gather security threat information from available data as well as from open source intelligence. In our data mining, we develop algorithmic applications, change detection, relational chaining, and sequence projections.

We help our customers apply standards. The standards include those from National Information Assurance Partnership® (NIAP), Common Criteria, and Director of Central Intelligence Directives. We support program offices during certification and accreditation or conduct certification test and engineering. We perform independent verification and validation, as well as operational test and evaluation.

ISSO knows public key infrastructure. We have an extensive history in cryptography and key management. We developed the GSA key management program and we are developing the prototype for over the network keying (OTNK). ISSO is leading the architecture definition for high-assurance Internet protocol encryptor (HAIPE) and we are developing the HAIPE reference implementation for the intelligence community.

ISSO provides knowledge management and supports conferences. We conduct computer security education and training and we support exercises at all levels.

## Net-Centric Warfare



### TECHNOLOGIES

In our third focus area, technologies, ISSO applies the breadth and depth of its expertise to research, design, develop, and implement technology to meet information assurance needs. We examine technology to counter threats two to five years in the future, but respond with results in under a year.

Our research strategy begins with a deep understanding of the threats, attacks, and vulnerabilities of host systems, and the networking systems they employ for interconnected communication.

We discover customer security needs, define, design, develop, and deploy secure systems. We conduct basic and applied research, develop concepts and produce prototypes for our customers to review and use. ISSO provides limited production of developed systems, but provides extensive laboratory support.

Our technologies focus on the strategic needs of our customers, such as protection of wired and wireless networks and operating systems, defending against malicious code, establishing and managing security policy, and providing high-speed assurance and forensics.

ISSO captures requirements, develops policy, and assesses threats to ensure system security. We design and specify architectures, demonstrate concepts, develop prototypes, and prepare computer models and simulations of secure systems. We select system components, develop software and hardware, and test designs. Our testing extends to system integration to ensure secure operation of system of systems.



## Homeland Security

ISSO develops prototype applications that provide highly accurate, highly automated approaches to computer and network security and response. We support our customers through installation and operation.

ISSO knows computer, communications, and transaction security. This knowledge includes protocols processing, reverse engineering, data networking, network management, wireless operations, and control and data storage

devices. We also specialize in cryptography, end-to-end encryption, link protocols, and access control systems. ISSO understands “on-

demand” hardware and software solutions, signal processing, fabrication of electronic systems, and foreign material exclusion of command and control systems.

In an industry that is receiving increasing numbers of attacks that are ever more sophisticated, blended, and capable of causing information loss or systems damage, we identify active and potential threats, and conduct research and development in automated approaches and solutions for intrusion prevention and remediation.

We are committed to the security and availability of networks, including the Internet. We work toward security advancements in domain name system (DNS), security for Simple Network Management Protocol Version 3, and security of active networks. ISSO examines host-based

## Technical Services



security and intrusion prevention from the operating system out. We identify and develop new techniques and architectures for coordinated intrusion prevention - including detection, correlation, alerting, response, isolation, recovery, and management - to protect both wired and wireless systems from network-based intrusions. ISSO analyzes and studies security issues in emerging wireless protocols, and proposes and develops solutions for the issues we uncover. We study and create easy-to-manage technologies and systematic processes for the generation and management of consistent security policies.

ISSO engages in research, design specification support, prototype development and hosting, acceptance testing support, and testing of systems that stop malicious code from damaging

computers and networks, and maintain system availability while under attack. We also analyze malicious code, gather forensic information, and identify trends.

We create both high-performance assurance and high-speed forensic technologies and solutions for network security and availability, as well as network protection, forensic analysis, and situation assessment.

ISSO investigates hard, challenging problems, which have a long horizon and high risk, but also provide high potential value. Our research products include studies, research papers, solution architectures, and prototype code that is tested and supplied with test drivers and documentation for use by security system developers.



## Hardware Systems

### SUMMARY

ISSO employs over 120 security professionals, including electrical engineers, computer scientists, and computer programmers, averaging more than twenty years of information security experience. This depth and breadth of experience can help our customers implement a security program that not only satisfies information assurance concerns, but also conforms to the reality of budget constraints.

### FOR MORE INFORMATION

For more information on SPARTA ISSO, call us at (443) 430-8000 or send an e-mail to [ISSO-Research@SPARTA.com](mailto:ISSO-Research@SPARTA.com).