The CACI Academy for Signals Analysts

The CACI Academy for Signals Analysts (CASA) provides a SIGINT training curriculum designed and developed by signals analysts for signals analysts. The training levels offered by CASA range from novice to expert.

CACI possesses the technical knowledge, experience, training background, and training methodology to provide efficient and comprehensive analyst training and mentoring. CACI has provided technical ELINT training and mentoring to signals analysts for nearly 30 years and has supported numerous government TechSIGINT analysis contracts/projects and training endeavors. CACI analysts have delivered individual training and mentoring to hundreds of government and contractor signals analysts throughout the ELINT community.

CACI also developed, and presents, courses for the National Cryptologic School (NCS). These NCS courses are listed in the summary on page 17.

Courses can be conducted on-site at your location or may be held at one of CACI’s facilities in Texas or Maryland.

Please check individual course pages at casa.caci.com for scheduling information. If your desired course is not currently scheduled, please call for more information. Inquiries can be directed to CACI’s Austin office, casa@caci.com or (512) 406-3627.

CACI Profile

CACI provides professional services and IT solutions needed to prevail in the defense, intelligence, homeland security, and federal civilian government arenas. We deliver enterprise IT and network services; data, information, and knowledge management services; business system solutions; logistics and material readiness; C4ISR integration services; cyber solutions; integrated security and intelligence solutions; and program management and SETA support services. CACI services and solutions help our federal clients provide for national security, improve communications and collaboration, secure the integrity of information systems and networks, enhance data collection and analysis, and increase efficiency and mission effectiveness. CACI is a member of the Fortune 1000 Largest Companies and the Russell 2000 index. Visit CACI on the web at www.caci.com and www.asymmetricthreat.net.

Quick Facts

- Specialists in systems integration, support services and knowledge management
- Founded in 1962, pioneering in simulation software
- Publicly owned since 1968
- $3.57B in FY 2011 revenue
- Approximately 13,900 employees worldwide
- More than 120 offices throughout North America and Western Europe
- SEI CMM Level 3 rating, ISO 20000 certification

Visit casa.caci.com for more information.
# Table of Contents

<table>
<thead>
<tr>
<th>Designator</th>
<th>Course Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA-2300</td>
<td>ELINT Foundations</td>
<td>3</td>
</tr>
<tr>
<td>SA-2310</td>
<td>Introduction to MARTES Digital Analysis</td>
<td>4</td>
</tr>
<tr>
<td>SA-3300</td>
<td>Applied MARTES</td>
<td>5</td>
</tr>
<tr>
<td>SA-3310</td>
<td>ESP for Analysts</td>
<td>6</td>
</tr>
<tr>
<td>SA-3340</td>
<td>Pulse Doppler Analysis</td>
<td>7</td>
</tr>
<tr>
<td>SA-3360</td>
<td>Electronic Attack Analysis</td>
<td>8</td>
</tr>
<tr>
<td>SA-3380</td>
<td>Radar Analysis Workstation</td>
<td>9</td>
</tr>
<tr>
<td>SA-3390</td>
<td>Introduction to MATLAB® Programming</td>
<td>10</td>
</tr>
<tr>
<td>SA-4300</td>
<td>Antennas and Advanced Scan/Beam Analysis</td>
<td>11</td>
</tr>
<tr>
<td>SA-4320</td>
<td>Radar Modules</td>
<td>12</td>
</tr>
<tr>
<td>SA-4350</td>
<td>MATLAB® Programming for TechELINT Analysis</td>
<td>13</td>
</tr>
<tr>
<td>SA-9300</td>
<td>Advanced Seminars</td>
<td>14</td>
</tr>
<tr>
<td>SA-9310</td>
<td>Ad Hoc Training/Mentoring</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>CACI Course Summary</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>CACI Course Details</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Registration Information</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Location Information</td>
<td>19</td>
</tr>
</tbody>
</table>
Who Should Attend
ELINT analysts and ELINT managers new to radar signal collection and processing.

Course Description
ELINT Foundations is a ten-day course comprised of a series of independent modules, which are presented in a classroom format, through platform lectures and hands-on homework/exercises. Each module provides a complete overview of the subject matter, and assumes no prior knowledge or exposure in the field. Although each module has pre-defined technical content, the format is flexible, allowing the presentation to be tailored to the specific needs of the customer.

How You Will Benefit
Students will learn the fundamental theories that all ELINT analysts must know to succeed in the field. You will be exposed to all facets of the radar signal and major components of a general radar system. After successful completion of the course, you will be able to properly characterize waveform attributes and understand radar functions.

Course Topics
- Basic Math Concepts
- Waveforms
- Modulation
- Radar Principles
- Interpulse Modulation
- Intrapulse Modulation
- Radiation Patterns and Scan Types
- Radar Types and Functions
- Collection Anomalies
- Radar Signals Analysis
- Electronic Attack
- Digitization
- Interpretive Analysis
- Reporting

Course Materials
Students will receive the SA-2300 ELINT Foundations student guide.

Course Manager
Brian Murphy
Mr. Murphy has 20 years experience as a technical ELINT analyst and instructor. He specializes in generating custom applications in MATLAB to analyze pulse modulation, exploit parameter sequencing, and generate radar signal processing simulations. As a former Navy Chief, Mr. Murphy is also an experienced collector having flown with VQ-2. Mr. Murphy holds a B.S. degree in Computer and Information Science.

Instructors
David Caudle
Rene Gonzalez
Brian Murphy
Linda Reams
Jason Schulz
Anthony Viola
**Introduction to MARTES Digital Analysis**

**Who Should Attend**
ELINT analysts who are new to radar signal processing and exploitation.

**Course Description**
Introduction to MARTES is an application companion to the SA-2300 ELINT Foundations course. This course offers five days of instruction on the basics of the MARTES signal analysis tool suite, signal processing, and analysis techniques utilizing multiple MARTES tools. The majority of the class involves discussions of digital analysis and the tools that are employed, but a large portion is spent processing and analyzing signals with the more commonly used MARTES applications. While any questions regarding MARTES are welcome, the theme of the class is on a basic level, which includes “buttonology” and explanations of “how” and “why” things work the way they do.

**How You Will Benefit**
The course offers a basic understanding of MARTES tool applications and is intended to serve as an introductory course to CACI’s more advanced signal processing ELINT courses.

**Course Topics**
- Introduction to MARTES
- The Analysis Process
- Signal Examination and Processing
- Signal Characterization
- Interpulse Analysis Examples
- Intrapulse Analysis Examples
- Report Writing Exercises
- Miscellaneous Techniques and Tools

**Course Materials**
This is a hands-on course. Students will receive some lecture material and exercise handouts.

**Course Manager**
**Brian Murphy**
Mr. Murphy has 20 years experience as a technical ELINT analyst and instructor. He specializes in generating custom applications in MATLAB to analyze pulse modulation, exploit parameter sequencing, and generate radar signal processing simulations. As a former Navy Chief, Mr. Murphy is also an experienced collector having flown with VQ-2. Mr. Murphy holds a B.S. degree in Computer and Information Science.

**Instructors**
David Caudle
Rene Gonzalez
Brian Murphy
Linda Reams
Anthony Viola
SA-3300

Applied MARTES

Who Should Attend
Intermediate-to-advanced ELINT/SIGINT analysts.

Course Description
Applied MARTES is a ten-day course designed to combine radar signal theory with ELINT-based MARTES applications. The course is intended to fill the training void between learning radar and signal theory and the ability to apply that knowledge to digital analysis. Students learn signal theory and then apply that theory using MARTES tools (BSTAIRS, MOCKINGBIRD, and more) with synthetic or sponsor-provided signals to strengthen understanding of analysis procedures and processing techniques.

How You Will Benefit
Students will attain a deeper understanding of MARTES ELINT tools. The course emphasizes radar signal theory while incorporating MARTES tool applications. This course is intended to serve as the base course to all of CACI’s specialized analysis courses.

Course Topics
- Introduction to MARTES Tools
- The Analysis Process
- Signal Examination and Processing
- Signal Characterization
- Interpulse Modulation Analysis
- Intrapulse Modulation Analysis
- Wideband Analysis
- Pulse Doppler Analysis
- Scan Analysis
- Statistical/Stability Analysis
- Miscellaneous Techniques and Tools

Course Manager
Brian Murphy
Mr. Murphy has 20 years experience as a technical ELINT analyst and instructor. He specializes in generating custom applications in MATLAB to analyze pulse modulation, exploit parameter sequencing, and generate radar signal processing simulations. As a former Navy Chief, Mr. Murphy is also an experienced collector having flown with VQ-2. Mr. Murphy holds a B.S. degree in Computer and Information Science.

Instructors
David Caudle
Brian Murphy
Linda Reams
Anthony Viola

Course Materials
This is a hands-on course. Students will receive lecture material and exercise handouts.

Visit casa.caci.com for more information.
SA-3310

ESP for Analysts

Who Should Attend
Junior-to-advanced ELINT/SIGINT analysts.

Course Description
ESP for Analysts is a four-day course designed to introduce ELINT analysts to the signal viewing and analysis capabilities of the ESP application. Emphasis is placed on data screening, data reduction, pulse-train deinterleaving, and signal extraction. The course provides instruction on these tasks and presents techniques to perform basic measurements. SA-3310 is presented in an interactive format, with instructor-led demonstrations and student exercises. Students are encouraged to bring their own data to class to practice the newly acquired techniques under instructor supervision.

How You Will Benefit
Students will receive an introductory look at the ELINT Screening Position (ESP) tool and its application to TechELINT analysis. You will be exposed to all of the analysis functionality and report generating capabilities of ESP.

Course Topics
- Introduction to ESP
- ESP Core Components
- Executive
- Visual File Reprocessor
- Smart Scrollbar
- Real Time Display
- ESP Data-Specific Components
- DIF, PDW, and SDW displays
- Spectral Displays
- Data Reduction and Extraction
- Graphical Analysis Report

Instructors
David Caudle
Rene Gonzalez
Brian Murphy

Course Manager
Rene Gonzalez
Mr. Gonzalez has 15 years experience as a technical ELINT analyst and trainer. He understands complex radar signals and interprets/models signal behavior to determine radar characteristics. Mr. Gonzalez holds a M.S. degree in Electrical Engineering and a B.S. degree in Mathematics.

Course Materials
This is a hands-on course. Students will receive a student guide and exercise handouts.
SA-3340

Pulse Doppler Analysis

Who Should Attend
ELINT analysts involved in pulse Doppler waveform analysis.

Course Description
Pulse Doppler Analysis is a five-day course comprised of pulse Doppler signal theory and analytic tool applications. Signal theory focuses on pulse Doppler waveform properties and usage, and identifies range and velocity tracking characteristics. Analytic tools introduced and used include MARTES, MODES, and EXCEL. The tools are used to characterize range and Doppler corridors, and to perform mode isolation for multi-track and multi-mode systems.

How You Will Benefit
This course is useful to persons with experience in pulse Doppler signals analysis or in other areas of radar signal analysis who wish to increase their knowledge of analytic techniques used in exploiting airborne, landbased, or shipboard weapon systems.

Course Topics
- Pulse Doppler Basics
- Pulse Doppler Radar Usage
- Multi-mode Systems
- Pulse Doppler Processing Techniques
- Target Tracking Systems
- Range and Doppler Tracking
- Scan Analysis
- Tool Application
- MODES
- MARTES
- Spreadsheets

Course Materials
Students will receive a Pulse Doppler Analysis student guide.

Course Manager
John Fielding
Mr. Fielding has 40 years experience as a technical ELINT analyst and trainer. He is a nationally recognized expert in radar theory, design, development, and DSP. He analyzes, simulates, and evaluates modern multi-mode, pulsed Doppler, phases array threat radar systems. Mr. Fielding holds an M.S. degree in Applied Mathematics, and a B.A. degree in Mathematics.

Instructors
John Fielding
Brian Murphy
Linda Reams
Electronic Attack Analysis

Who Should Attend
Analysts involved in electronic attack analysis, and analysts responsible for updating national databases for the Electronic Warfare Community.

Course Description
Electronic Attack Analysis is a three-day course comprised of electronic attack signal theory and analytic tool applications. Signal theory focuses on waveform generation, pulse techniques (RGPO, VGPO, AGPO), DRFM, victim effects, and emerging technologies. Analytic tools are introduced and used for characterizing the jamming waveforms.

How You Will Benefit
This course is useful to persons with experience in EA signals analysis or in other areas of radar signal analysis who wish to increase their knowledge of analytic techniques used in exploiting airborne, landbased, or shipboard weapon systems.

Course Topics
- Electronic Attack Analysis
- Electronic Attack Systems and Platforms
- Noise
- Barrage
- Spot
- Digital RF Memory
- Doppler Noise
- Repeater Jammers
- GPS Jamming
- Tool Application
- MARTES

Course Materials
Students will receive the SA-3360 student guide.

Course Manager
Anthony Viola
Mr. Viola has 20 years experience as a technical ELINT analyst and trainer. His expertise lies in analyzing Electronic Attack (EA) and Airborne Pulse Doppler radar systems. As a former Air Force Staff Sergeant, Mr. Viola was responsible for the analysis, processing, reporting, and dissemination of time critical ELINT data for SIGINT missions. Mr. Viola holds an A.S. degree in Electronic Engineering Technology.

Instructors
Hoy Miller, Jr.
Anthony Viola
SA-3380

Radar Analysis Workstation

Who Should Attend
Junior-to-advanced ELINT/RADAR analysts.

Course Description
SA-3380 is a two-to-five day (dependent on number of students) Radar Analysis Workstation course providing a general JRAW overview followed by a review of the radar range equation. The group session is followed by one-to-two hour hands-on sessions for each student one-on-one with the instructor. The student will input one or two radars of interest into JRAW and discuss the specific radar performance issues revealed. The training can be extended or compressed based on student experience levels.

How You Will Benefit
Students will obtain a greater understanding of the performance of specific radars through the use of JRAW (Java Radar Analysis Workstation), a tool created for radar performance estimation.

Course Topics
- Radar Performance
- Beam Coverage Diagram
- Range Estimates
- Intrapulse Modulation Effects
- Range-Doppler Matrix
- Interfacing to Other Tools

Course Materials
This is a hands-on course. Students will receive exercise handouts.

Course Manager
Linda Reams
Ms. Reams has 22 years experience in technical ELINT analysis and training. She specializes in detailed, interpretive, systems-level analysis of modern radars using signal processing and advanced radar tools. Ms. Reams is also expert on PROFORMA signals. Ms. Reams holds M.S. and B.S. degrees in Electrical Engineering as well as a B.A. in Physics.

Instructors
Linda Reams
David Caudle
SA-3390

Introduction to MATLAB® Programming

Who Should Attend
Signals analysts, engineers, mathematicians, and technical managers.

Course Description
This five-day course provides an introduction to the Matrix Laboratory (MATLAB®) software environment. Topics include familiarization with the MATLAB® integrated development environment (IDE), data manipulation, programming fundamentals, functions, plotting, and graphics. The course emphasizes the application of developed MATLAB® scripts to solve specific technical problems.

How You Will Benefit
Students will obtain a working knowledge of MATLAB® for use in signal modeling and analysis. No prior knowledge of MATLAB® functionality or software is required, although familiarity with topics in algebra and trigonometry is assumed.

Course Topics
- Variables and Expressions
- Creating and Manipulating Arrays
- Array Operations
- Scripting
- Data
- Plotting
- Programming Fundamentals
- Functions
- Numerical Analysis

Course Materials
Students will receive an Introduction to MATLAB® text book and a student guide.

Course Schedule and Location
Austin, CACI Technologies, Inc (see page 19)
March 5 – 9, 2012
8 a.m. – 5 p.m. Monday – Friday
$2,750

Chantilly, CACI Technologies, Inc. (see page 20)
October 15 – 19, 2012
8 a.m. – 5 p.m. Monday – Friday
$2,750

Course Manager
Brian Murphy
Mr. Murphy has 20 years experience as a technical ELINT analyst and instructor. He specializes in generating custom applications in MATLAB to analyze pulse modulation, exploit parameter sequencing, and generate radar signal processing simulations. As a former Navy Chief, Mr. Murphy is also an experienced collector having flown with VQ-2. Mr. Murphy holds a B.S. degree in Computer and Information Science.

Instructors
Rene Gonzalez
Brian Murphy
Jason Schulz
SA-4300

Antennas and Advanced Scan/Beam Analysis

Who Should Attend
Analysts involved in antenna scan and beam analysis of radar weapon systems.

Course Description
Antennas and Advanced Scan/Beam Analysis is a four-day course comprised of radar antenna theory and analytic tool applications. Signal theory focuses on mechanically and electronically steered arrays, and beam forming. A simple spreadsheet application (MS Excel) is introduced and used for characterizing antenna scan and beam radiation patterns.

How You Will Benefit
Students will learn analytic processes and techniques used to determine advanced scan behavior commonly found in modern RADAR systems.

Course Topics
- Advanced Scan and Beam Analysis
- Mechanically Steered Antennas
- Electronically Steered Arrays
- Radiation Pattern Fundamentals
- Antenna Sector Characterization
- Antenna Technology and Data Behavior
- Beam Formation
- Multipath Exploitation
- Tool Application
- Spreadsheets

Course Materials
Students will receive the SA-4300 student guide.

Visit casa.caci.com for more information.
SA-4320

Radar Modules

Who Should Attend
Intermediate-to-advanced signals analysts, engineers, and technical managers.

Course Description
Radar Modules is a five-day course comprised of principles of radar systems and subsystem-by-subsystem analysis. The functions for each subsystem are described, and the features of each subsystem that can be derived from analysis and interpretation of ELINT data are presented. Rule-of-thumb approximations are given to provide working values when ELINT data is either not available or is not applicable for performance estimates.

How You Will Benefit
Students will learn to use ELINT data measurements to infer the primary features of radar subsystems and to develop estimates for the parameters needed to solve the radar range equation. You will learn procedures to follow and various “rules of thumb” to use in the analysis of standard radar waveforms (e.g., MTI processing, assessing multiple-time-around rejection performance, assessing coherent integration periods, determining maximum resolvable range, PRF selection algorithm recovery and exploitation, etc.).

Course Topics
- Overview of Interpretive ELINT Analysis
- Antenna Subsystems
- Transmitter Subsystems
- Receiver/Signal Processor Subsystems
- Microwave Subsystems
- Computer Subsystems
- Displays and Controls Subsystems

Course Materials
Students receive an SA-4320 Radar Modules guide.

Course Manager
John Fielding
Mr. Fielding has 40 years experience as a technical ELINT analyst and trainer. He is a nationally recognized expert in radar theory, design, development, and DSP. He analyzes, simulates, and evaluates modern multi-mode, pulsed Doppler, phases array threat radar systems. Mr. Fielding holds an M.S. degree in Applied Mathematics, and a B.A. degree in Mathematics.

Instructors
John Fielding
Linda Reams
SA-4350

MATLAB® Programming for TechELINT Analysis

Who Should Attend
Signals analysts, engineers, mathematicians, and technical managers.

Course Description
This intensive five-day course is focused on addressing intermediate-to-advanced TechELINT concepts using the Matrix Laboratory (MATLAB®) software environment. Topics include time/frequency series representations, application of data transforms (e.g., FFT, Hilbert), data correlation, categorizing waveforms, synthesizing PRI selection algorithms, shift register generator (SRG) modeling, antenna performance estimation, beam fitting, and demodulation techniques for various signals (e.g., PSK, FSK, MSK, PCM).

The course emphasizes the application of MATLAB® functionality to solve specific TechELINT analysis problems.

How You Will Benefit
In this rigorous application-based course, students will learn how to build and combine functions to tackle complex analysis problems found in various technical ELINT scenarios. Upon completion of the course you will have a better understanding of when to create a custom tool to fill a gap in existing analysis software suites.

Prerequisites
SA-3390 Introduction to MATLAB® Programming, or equivalent experience.

Course Topics
- Digital Signal Processing Applications
- Intrapulse/Interpulse Analysis
- Sequence Analysis
- Antenna/Scan Analysis
- Guidance and Commanding Demodulation

Course Materials
Students will receive an SA-4350 student guide.

Course Schedule and Location
Chantilly, CACI Technologies, Inc. (see page 20)
February 6-10, 2012
8 a.m. – 5 p.m. Monday – Friday
$2,750

Austin, CACI Technologies, Inc (see page 19)
November 5-9, 2012
8 a.m. – 5 p.m. Monday – Friday
$2,750

Course Manager
Jason Schulz
Mr. Schulz has 20 years experience as a technical ELINT analyst and trainer. He performs in-depth technical ELINT analysis and develops new analysis techniques and custom software. Mr. Schulz holds M.S. and B.S. degrees in Computer Science.

Instructors
Rene Gonzalez
Brian Murphy
Jason Schulz
**Advanced Seminars**

**Who Should Attend**
These seminars are intended for junior-to-advanced level analysts desiring an introduction to an advanced topic, or experienced analysts trying to broaden their skill set. These one-to-two day seminars can be taken individually or combined to create a week of custom training.

**Seminar Description**

<table>
<thead>
<tr>
<th>Seminar</th>
<th>Description</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog and Digital Signal Collection</td>
<td>This seminar is designed to introduce both digital and analog collection positions. The course transitions from collection fundamentals to performing preliminary (quick-look) analysis. Finally, the course introduces and discusses advanced collection techniques.</td>
<td>2 days</td>
</tr>
<tr>
<td>Beam Structure Recovery Analysis</td>
<td>Students use LEO or P3 (conventional) data to isolate and make beam structure measurements. The seminar combines theory with specific examples of ELINT observables.</td>
<td>2 days</td>
</tr>
<tr>
<td>Beam Structure Recovery Analysis</td>
<td>A refresher and overview of the advanced and interpretive processing capabilities (e.g., coherent integration, histogram tagging, ambiguity diagrams, etc.) of the BSTAIRS tool suite.</td>
<td>1 day</td>
</tr>
<tr>
<td>JRAW Application</td>
<td>An overview of the Java-based Radar Analysis Workstation with modules to model and estimate radar detection, MTI capabilities, MTAR waveforms, PSK sequences, and more. JRAW provides the analyst an easy way to model and estimate key radar system capabilities.</td>
<td>1 day</td>
</tr>
<tr>
<td>Multipath Workshop</td>
<td>Airborne multipath provides the analyst information about both the radar system as well as the platform carrying the radar. This seminar will explore the different signal paths and provide a detailed understanding of the information available from analyzing multiple paths. Discussion includes tying ELINT, PROFORMA, COMMS, and FIS into a fused event.</td>
<td>2 days</td>
</tr>
<tr>
<td>PRF Selection Algorithm</td>
<td>Introduction to PRF selection algorithm recovery. Exploitation of PRF sequence associated with range-eclipse avoidance can provide such information as max/min range of track initiation, max/min range of target track, max/min target radial velocity, and critical points in track process.</td>
<td>1 day</td>
</tr>
<tr>
<td>Range and Doppler Corridor Analysis</td>
<td>Overview of the theory incorporated into corridor plots provides a basis for study of the wide range of different target tracking methods employed by radar systems. Emphasis is placed on exercises providing practice in determining corridors and extracting information derived from corridor plots.</td>
<td>1 day</td>
</tr>
<tr>
<td>Shift Register Generators</td>
<td>Introduction to binary sequence analysis. Topics include binary number representations, binary counters, PSK, PRI, and RF sequence generation using SRGs. Hands-on exercises and real world case studies using SRGs for parameter sequences.</td>
<td>1 day</td>
</tr>
<tr>
<td>Wideband Signals Analysis</td>
<td>Discussion is comprised of wideband theory and analytic tool applications. Topics focus on purposes of wideband systems, wideband vs. AESA technology, coherency and detection challenges, RF agility types, wideband mapping functions, and wideband tracking functions. Analytic tools introduced and used for characterizing wideband signals include MARTES and X-MIDAS.</td>
<td>2 days</td>
</tr>
</tbody>
</table>

**Ask Us About…**

**Interpulse Interpretive Analysis** – Determining radar information derived from specific waveform types such as MTI, pulse Doppler, etc.

**Intrapulse Modulation** – Overview and anomalous ELINT observables of common modulations due to collection or various scenarios.

**Mismatched Filtering** – Theory and application of mismatched filtering for BPSK pulses.

**Scan Analysis for Electronically Steered Arrays** – Isolate scan beams and determine number of beams per scan using MR_SCAN (ASPEN application) or Modes.
Who Should Attend
Signals analysts, engineers, mathematicians, and technical managers.

Course Description
CACI trainers are practicing analysts with signal conversion, data processing, data analysis, techniques development, and teaching skills who can provide practical as well as theoretical training in time, frequency, and spatial domains. They are able to respond to questions in an unstructured setting that is not limited to a formal agenda.

CACI offers ad hoc training and mentoring to meet unique training requirements on a wide variety of technical topics. Our analysts are well versed in a broad array of topics related to ELINT and TechSIGINT. Whether your training needs relate to the use and set-up of analog equipment, digitizers, analysis software tools, or analysis techniques, CACI has analysts-trainers that can work with your staff to provide solutions from one-on-one training to informal class settings.

How You Will Benefit
If training requirements exist that are not addressed by formal training opportunities, or if you have analysts with a broad spectrum of questions covering a wide range of ELINT subjects, ad hoc training or mentoring may be your solution. You will receive highly customized technical training specified to your requirements.

Previous Offerings
- Mentoring (MESAP/Intern Panel)
- On-the-Job Training
- CATS
- GALE-Lite
- Digital Signal Lab (DSL)

Course Materials
Customized to the training requested.

Course Manager
Rene Gonzalez
Mr. Gonzalez has 15 years experience as a technical ELINT analyst and trainer. He understands complex radar signals and interprets/models signal behavior to determine radar characteristics. Mr. Gonzalez holds a M.S. degree in Electrical Engineering and a B.S. degree in Mathematics.

Instructors
Varies by topic
CACI Course Summary

CACI Courses Available

SA-2300 ELINT Foundations
SA-2310 Introduction to MARTES Digital Analysis
SA-3300 Applied MARTES
SA-3310 ESP for Analysts (a.k.a. SIGE3850)
SA-3340 Pulse Doppler Analysis
SA-3360 Electronic Attack Analysis (a.k.a. SIGE3840)
SA-3380 Radar Analysis Workstation (a.k.a. SIGE3001)
SA-3390 Introduction to MATLAB® Programming
SA-4300 Antenna and Advanced Scan/Beam Analysis
SA-4320 Radar Modules
SA-4350 MATLAB® Programming for TechELINT Analysis
SA-9300 Advanced Seminars
SA-9310 Ad Hoc Training/Mentoring

Current Schedule

March 2012 and October 2012
February 2012 and November 2012

NCS Courses Developed and Presented by CACI

SIGE4820 Advanced ELINT Analysis Techniques
SIGE4830 Advanced Interpretive ELINT Analysis
SIGP3800 PROFORMA Signals Analysis

Unless otherwise noted, all Austin courses are held at our Analysis, Training, and Development office:

CACI Technologies, Inc.
11211 Taylor Draper Lane
Suite 115
Austin, TX 78759

Schedule information is subject to change. Please visit casa.caci.com for up-to-date information.
# CACI Course Details

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Facility Requirements</th>
<th>Maximum Number of Students</th>
<th>Course Length</th>
<th>Number of Instructors</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA-2300</td>
<td>ELINT Foundations</td>
<td>✓</td>
<td>20</td>
<td>2 weeks</td>
<td>2</td>
</tr>
<tr>
<td>SA-2310</td>
<td>Introduction to MARTES Digital Analysis</td>
<td>✓</td>
<td>12</td>
<td>1 week</td>
<td>2</td>
</tr>
<tr>
<td>SA-3300</td>
<td>Applied MARTES</td>
<td>✓</td>
<td>12</td>
<td>2 weeks</td>
<td>2</td>
</tr>
<tr>
<td>SA-3310* aka SGE3850</td>
<td>ESP for Analysts</td>
<td>✓</td>
<td>4 days</td>
<td>1</td>
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<tr>
<td>SA-3340*</td>
<td>Pulse Doppler Analysis</td>
<td>✓</td>
<td>12</td>
<td>1 week</td>
<td>2</td>
</tr>
<tr>
<td>SA-3360* aka SGE3840</td>
<td>Electronic Attack Analysis</td>
<td>✓</td>
<td>12</td>
<td>3 days</td>
<td>2</td>
</tr>
<tr>
<td>SA-3380 aka SGE3001</td>
<td>Radar Analysis Workstation</td>
<td>✓</td>
<td>Variable</td>
<td>2-5 days</td>
<td>1</td>
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<tr>
<td>SA-3390</td>
<td>Introduction to MATLAB(^*) Programming</td>
<td>✓</td>
<td>12</td>
<td>1 week</td>
<td>2</td>
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<tr>
<td>SA-4300</td>
<td>Antennas and Advanced Scan/Beam Analysis</td>
<td>✓</td>
<td>12</td>
<td>4 days</td>
<td>2</td>
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<tr>
<td>SA-4320</td>
<td>Radar Modules</td>
<td>✓</td>
<td>20</td>
<td>1 week</td>
<td>2</td>
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<td>SA-4350</td>
<td>MATLAB(^*) Programming for TechELINT Analysis</td>
<td>✓</td>
<td>12</td>
<td>1 week</td>
<td>2</td>
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<tr>
<td>SA-9300</td>
<td>Advanced Seminar</td>
<td>Variable</td>
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<td>SA-9310</td>
<td>Ad Hoc Training/Mentoring</td>
<td>Variable</td>
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</tbody>
</table>

*Registrants must have an active U.S. TS/SI security clearance.
Registration Information

Registration Information
Registration for CACI courses is quick and easy. Simply go online to casa.caci.com, find the course page you are interested in, and click the Register Now button. You can pay safely and securely with VISA, MasterCard, or American Express credit cards.

After you register, you will receive a confirmation letter with detailed instructions.

Host a Course at Your Facility
Every course in this catalog is available for delivery at your location. Please call or write to the CASA Training Coordinator or speak with your local CACI Training representative to discuss the possibility of hosting a course.

Course Fee
The course fee includes the cost of all training materials. The fee does not include any costs incurred by the student for traveling, transportation, lodging, etc.

Courses have limited enrollment and fill quickly. Please check casa.caci.com for current seat availability. Register early to reserve a seat in the course.

Course fees are subject to change. Please visit the course registration page at casa.caci.com for current rates.

Cancellation Policy
If you are unable to attend the course after you have already registered, you may cancel your registration by:
1. Following the cancellation procedure outlined in your registration confirmation,
2. Visiting the course registration page and following the cancellation link or
3. Calling or emailing the CASA Training Coordinator, (512) 406-3627, casa@caci.com.

If you cancel your enrollment 12 or more business days prior to the course start date, you may:
- request a full refund
- substitute a student

If you cancel your enrollment with fewer than 12 business days until the course start date, you may:
- substitute a student

If circumstances require you to cancel your enrollment, please do so as far in advance from the course start date as possible to allow other interested students time to register.
Location Information

CACI Technologies, Inc.
11211 Taylor Draper Lane
Suite 115
Austin, TX 78759
(512) 406-3600

CACI’s department of Analysis, Training, and Development is located in Northwest Austin near the Arboretum shopping district. The University of Texas campus and downtown Austin attractions are a quick 15-minute drive away.

Directions
From Austin Bergstrom International Airport drive west on State Highway 71 for approximately one mile. Exit State Highway 71 onto US Highway 183 northbound. Remain on US Highway 183 N for approximately 13 miles. Exit US Highway 183 N at Braker Lane/Balcones Woods Drive. Turn left onto Braker Lane. Turn right at Jollyville Road. Turn left onto Taylor Draper Lane. Taylor Draper Lane is one block north of the Jollyville Road/Balcones Woods Drive intersection. There is not a stop light at Taylor Draper Lane and Jollyville Road. Free visitor parking is available in the basement parking garage or in front of the building. CACI is located on the first floor in Suite 115.

Local Area Hotels
The following hotels are located near the CACI Technologies, Inc., office. This list is not all-inclusive. Additionally, registrants should check with the hotel regarding the availability of per diem rates or other rate requirements.

**Courtyard Austin**
NW/Arboretum
9409 Stonelake Boulevard
Austin, TX
(512) 502-8100
www.marriott.com

**Hampton Inn Austin**
NW/Arboretum
3908 West Braker Lane
Austin, TX
(512) 349-9898
www.hamptoninn.com

**Hilton Garden Inn**
NW/Arboretum
11617 Research Blvd
Austin, TX
(512) 241-1600
www.hiltongardeninn.com

**Hyatt Summerfield Suites**
NW/Arboretum
10001 North Capital of Texas Hwy
Austin, TX
(512) 342-8080
www.hyatt.com

**SpringHill Suites Austin**
NW/Arboretum
10936 Stonelake Boulevard
Austin, TX
(512) 349-0444
www.springhillsuites.com
CACI’s Commonwealth A building is located in Chantilly, VA. It is conveniently located near Dulles Airport as well as many hotels and restaurants.

**Directions**

From Dulles Airport drive east on Dulles Toll road (RT 267) and take the first Exit #9A RT-28/Sully Road South. Remain on RT-28 South for approximately six miles. Exit Westfields Boulevard and turn left. Turn left at the first intersection onto Newbrook Drive. Proceed to first five story building on the left for Commonwealth A.

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**Local Area Hotels**

The following hotels are located near the CACI Technologies, Inc., office. This list is not all-inclusive. Additionally, registrants should check with the hotel regarding the availability of per diem rates or other rate requirements.

- **Hyatt Place**
  4994 Westone Plaza
  Chantilly, VA 20151
  (703) 961-8160
  www.hyatt.com

- **Holiday Inn**
  4335 Chantilly Shopping Center
  Chantilly, VA 20151
  (703) 815-6060
  www.holidayinn.com

- **Comfort Suites**
  13980 Metrotech Dr
  Chantilly, VA 20151
  (703) 263-2007
  www.comfortsuites.com

- **TownePlace Suites**
  14036 Thunderbolt Place
  Chantilly, VA 20151
  (703) 709-0453
  www.marriott.com