



mercury
electronic warfare

Course Brochure

2019 Schedule

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ELECTRONIC WARFARE COURSES

INTRODUCTION

1. Mercury Electronic Warfare (EW) Ltd is a dynamic, forward thinking company populated by ex-British Her Majesty's Forces EW Operational and Engineering experts. We pride ourselves on delivering first class, operationally focused domain knowledge expertise to the international Defence Industry, Ministry of Defence (MOD) and UK Armed Forces. We have built up a significant portfolio of training delivery experience working with the MOD, capability providers and a variety of overseas countries, particularly in the Middle and Far East regions. Our services include; consultancy, operational support and training design, development and delivery.

TRAINING DESIGN AND DELIVERY

2. Mercury EW Ltd conducts all training design and development in accordance with the UK Ministry of Defence's (MoD) Joint Service Publication 822 – Defence Systems Approach to Training (DSAT). In fact, many leading UK commercial companies also adopt this methodology as standard. The DSAT process aims to ensure that all training courses are fit for purpose by being designed specifically with the operational role(s) in question. Moreover, each course is supported with a formalized document set, providing a recognised audit trail for the customer. A typical Course Document Set (CDS) could include: a Formal Training Statement (FTS) (details all elements of a job to be taught, including the conditions and standards expected); individual course/lesson material (PowerPoint, student exercises, etc.); Instructional / Learning Specifications (I/LSpecs) (used to assist an instructor in delivering all aspects of each lesson); Assessment Strategy; student/user handbooks; and a Training Authorisation Document (used for the management and change control of training). A complete DSAT document set can be provided with each course. Depending on the nature of the training, Mercury EW Ltd use a blend of learning material to enhance their courses e.g. PowerPoint, student based syndicate exercises, equipment simulation and scenario generation.

SHORT COURSE ACCREDITATION

3. The course content and learning objectives of each course can be recognised and fully validated by a leading UK University. On successful completion of an accredited course students gain recognised University awarded Credit Accumulation Transfer Scheme (CATS) points at either PG Certificate or PG Diploma level.

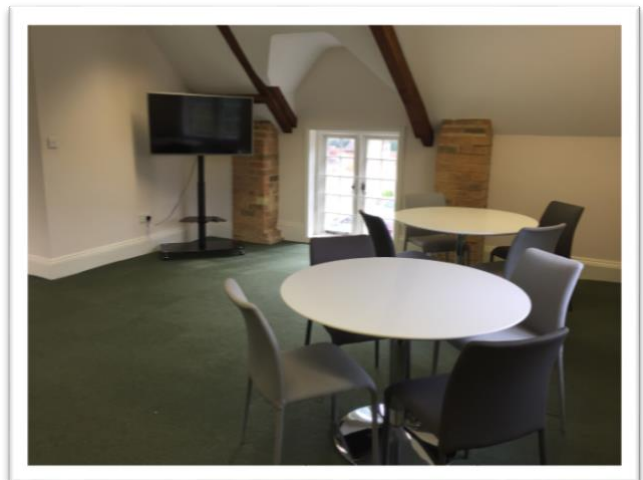
4. Another option available to customers is for students to receive an "equivalency letter" from the University stating the course they attended is "equivalent" to a recognised amount of CATS points at either PG Cert or PG Dip level. It is NOT an academic award as students will not have enrolled on a University certified course. The "equivalency letter" is classified as Advanced Prior Learning (APL) and students can use this for future advanced education. More information regarding these options can be provided on request.

COURSE INFORMATION

5. All the courses outlined in this brochure are available throughout 2019 and, depending on your choice of course, can be delivered at Mercury EW Ltd.'s EW facility or in the customer's own country for theory only based courses. Any courses delivered overseas can conform to the Islamic working week if required. The course schedule at Annex A contains the dates and locations for all our EW courses.

6. Mercury EW Ltd.'s new EW training facility located at the Head Office in Haverholme Priory Offices offers the following facilities:

- Modern conference room facilities and separate room for religious requirements
- Fully interactive touchscreen whiteboards and Epson short throw projectors
- Integrated 10Gps Local Area Network (LAN)
- Powerful HP Windows 10 Pro student workstations with dual HD monitors
- Real time distribution of training media to student monitors
- Catering available from simple refreshments to full buffet lunch
- Private car parking
- Student rest area



Mercury EW Ltd Head Office – New EW Training Facility

7. Mercury EW Ltd can also provide comprehensive administrative and logistical support for all courses, including:

- Airport transfers
- Arranging suitable accommodation, hotel or rented
- Local information packs
- Additional services upon request

CONCLUSION

8. This brochure is designed to provide information regarding the EW courses available for delivery by Mercury EW Ltd. Subject to agreement with the customer, a more detailed breakdown of each course syllabus and provisional costings can be provided on confirmation of the training requirement.

Annex:

A. Mercury EW Ltd - Course Schedule 2019.

Course Information

Mercury EW Ltd - Course Schedule 2019

Course Title/Month	Jan 19	Feb 19	Mar 19	Apr 19	May 19	Jun 19	Jul 19	Aug 19	Sep 19	Oct 19	Nov 19	Dec 19
EW Management (2 Weeks)	14 – 25 Jan 19											
EW Analysis (2 Weeks)		28 Jan – 8 Feb 19										
Radar Fundamentals (1 Week)						24 – 28 Jun19				30 Sep – 4 Oct 19		
ELINT Technical Analysis (1 Week)							15 – 19 Jul 18					
Maritime Tactical EW (4 Weeks)						3 – 28 Jun 19						
Maritime EA (1 Week)		4 – 8 Feb 19										
Communications Principles (1 Week)			4 – 8 Mar 19		6 – 10 May 19						18 – 22 Nov 19	

Course Title/Month	Jan 19	Feb 19	Mar 19	Apr 19	May 19	Jun 19	Jul 19	Aug 19	Sep 19	Oct 19	Nov 19	Dec 19
Land EW (2 Weeks)									16 – 27 Sep 19		18 – 29 Nov 19	
COMINT/EW Operator (2 Weeks)										14 – 25 Oct 19		
Counter RCIED (3 Days)					27 – 29 May 19				9 – 11 Sep 19			
EW For Engineers (1 Week)					20 – 24 May 19							
Introduction to Radar Signals Collection Course (2 Weeks)	Course dates available via website enquiry											
Introductory Radar Signal Analysis (2 Weeks)									9 – 20 Sep 19		18 – 29 Nov 19	
Intermediate Radar Signal Analysis (2 Weeks)										7 – 18 Oct 19		9 – 20 Dec 19
Battlespace Spectrum Management (1 Week)	Course dates available via website enquiry											

Course Title/Month	Jan 19	Feb 19	Mar 19	Apr 19	May 19	Jun 19	Jul 19	Aug 19	Sep 19	Oct 19	Nov 19	Dec 19
I2 Analyst's Notebook (1 Week)											11 – 15 Nov 19	



EW Management Course

Introduction

This course is designed to inform and introduce delegates to the key principles of EW Management. The course will be delivered with a blend of theory and practical based scenarios. Using the theory based knowledge and practical lesson delegates will increase their understanding of the EW Management principles within a joint environment and an all source approach to EW in modern warfare.

What you will learn:

EW Collection Management

- CCIRM Process
- Command and Control Organisation
- EW Cycle
- Collection Plan
 - Creation, Implementation and Management
- ISTAR Capabilities, Org & Management
- Intelligence Cycle
- Intelligence Sources

EW in Joint Operations

- Overview of an ISTAR Organisation
- EW in Land, Sea & Air Domains
- Battlespace Management
- Deception
- EW Mutual Support
- Understanding the C2 Organisation above and below EWCC
- EA & EP
- All Source Analysis
- EW Threats

Joint EW Co-ordination Cell Exercise

Practical exercise to include:

- Collection Plan Creation
- Battlespace Management
- EW & Intelligence Cycles
- Sensor Deployment
- C2

Who Should Attend?


Military and Civilian Radar and EW practitioners from both Operational and Engineering backgrounds. Programme & Project Managers, Systems Engineers and Technical Staff.

Key Organisations:

- Ministry of Defence
- HQ Joint, Army, Navy and Air Force EW operators / Analysts
- All Government agencies, industries and organisations interested in the technical aspects of EW

Duration - 2 Weeks

Location - Mercury EW Ltd – Training Facility



EW Analysis Course

Introduction

This course addresses key elements of EW Analysis and will provide delegates with a sound operational understanding and appreciation of EW Analysis, Data Fusion and the need for sound EW Threat Library Management.

What you will learn:

Information Analysis

- All source information analysis
- Pattern analysis
- OSINT
- Statistical analysis
- Semantic intelligence
- Data mining techniques

Data Fusion COMINT/ELINT

- Overview of the intelligence process
- Intelligence sources
- Correlation and fusion techniques
- Intelligence cycle
- All source analysis
- Confidence /reliability grading

Library Threat Management COMINT/ELINT

- How to create a database abstract
- Mission Library fundamentals
- Creating and Filtering EOBs
- Library Distribution

Who Should Attend?

Military and Civilian Radar and EW practitioners from both Operational and Engineering backgrounds. Programme & Project Managers, Systems Engineers and Technical Staff.

Key Organisations:

- Ministry of Defence
- HQ Joint, Army, Navy and Air Force ELINT operators / Analysts
- Defence Science and Technology Agencies
- Defence Research Lab/Institutes
- All Government agencies, industries and organisations interested in the technical aspects of ELINT analysis

Duration - 2 Weeks

Location - Mercury EW Ltd – Training Facility



Radar Fundamentals Course

Introduction

This course is designed to inform and introduce delegates to the background, history and key operating principles used in modern radar technology. Looking back at older legacy systems to more advanced technology, delegates will have an insight into how radar has been, and still is an important part of today's military and civilian life. The course will be delivered with a blend of theory and practical based lessons. Using the theory based knowledge and practical lessons, delegates will increase their understanding of the complex parameters used in modern radar systems and how the changing of parameters and physical elements influences performance and operating capabilities.

What you will learn:

- Introduction to the History of Radar
- Principles of Operation
- Types of Radar and Function
- The Production of a Radar Pulse
- Radar Technology
- Inter-Pulse & Intra-Pulse Characteristics
- Measurable Radar Pulse Parameters
- Radar Devices
- Antenna Theory and Design
- Radar against Modern ESM & ECM Technology
- Radar in Modern Warfare
- Radar Calculations & Practical Radar Design

Who Should Attend?


Military and Civilian Radar and EW practitioners from both Operational and Engineering backgrounds. Programme & Project Managers, Systems Engineers and Technical Staff.

Key Organisations:

- Ministry of Defence
- HQ Joint, Army, Navy and Air Force
- Defence Science and Technology Agencies
- Defence Research Lab/Institutes
- All Government agencies, industries and organisations interested in the development of Electronic Warfare

Duration - 1 Week

Location - Mercury EW Ltd – Training Facility



ELINT Technical Analysis Course

Introduction

This course addresses key elements of ELINT Technical Analysis and will provide delegates with a sound operational understanding and appreciation of ELINT and its role within modern warfare. The course will be delivered with a blend of theory and practical based lessons. The practical elements of the course will be conducted using a state of the art Pulse Analysis Tool, enabling delegates to conduct Technical Analysis of real world parameters. The combination of theory based knowledge and the practical Pulse Analysis Tool ensures delegates increase their understanding of the complex parameters used in radar systems, as well as the skills needed to produce effective and useful ELINT Data files.

What you will learn:

- Electronic Intelligence Defined
- Major ELINT Signal Parameters
- Radar Equations and Constraints
- ELINT Interception System Characteristics
- Characteristics of a Pulse
- Intrapulse / Interpulse Analysis
- Pulse Train Deinterleaving
- Introduction to ELINT Technical Analysis procedures
- Introduction to Pulse Analysis Tool – real time Pulse Descriptor Word (PDW) collection and analysis tool
- PDW Analysis
- Producing ELINT Reports

Who Should Attend?

Military and Civilian Radar and EW practitioners from both Operational and Engineering backgrounds. Programme & Project Managers, Systems Engineers and Technical Staff.

Key Organisations:

- Ministry of Defence
- HQ Joint, Army, Navy and Air Force ELINT operators / Analysts
- Defence Science and Technology Agencies
- Defence Research Lab/Institutes
- All Government agencies, industries and organisations interested in the technical aspects of ELINT analysis

Duration - 1 Week

Location - Mercury EW Ltd – Training Facility



Maritime Tactical EW Course

Introduction

This course addresses key elements of Tactical Maritime EW and provides delegates with a sound operational understanding and appreciation of Maritime EW and its role in modern warfare. The course includes planning, processes, tactics and procedures required to effectively conduct Maritime EW operations. The subjects are designed to be in line with current generic maritime practices used within modern navies but are not specific to any particular equipment deployed on naval platforms.

What you will learn:

- Radar Foundation
- EW Theory (ESM, EPM, ECM)
- Radar and EW Weapons, Threats and Platforms
- EW Data Analysis and Databases
- EW Planning and Preparation
- EW Training
- Optimisation of ESM/ECM Systems
- EW Operational Support
- Weapon Systems and Countermeasures
- Electro Optical and Infra-Red
- Operational Employment of Maritime EW

Who Should Attend?

Military and Civilian Radar and EW practitioners from both Operational and Engineering backgrounds. Programme & Project Managers, Systems Engineers and Technical Staff.

Key Organisations:

- Ministry of Defence
- HQ Joint, Army, Navy and Air Force EW Operators / Analysts
- Defence Science and Technology Agencies
- Defence Research Lab/Institutes
- All Government agencies, industries and organisations interested in the technical aspects of ELINT analysis

Duration - 4 weeks

Location - Mercury EW Ltd – Training Facility



Maritime EA Course

Introduction

This five-day course addresses the key fundamentals of Maritime EA. The course is designed to introduce delegates to the background, history and key operating principles used in a modern EA environment. A review of older legacy systems through to more advanced technology will give delegates an insight into how EA plays an important part in today's Maritime Warfare. The course will cover all key operational aspects and delegates will increase their understanding of EA and how it is applied within modern ASMD tactics. During the practical elements of the course students will use MC Countermeasures Integrated Radar EW Test & Training Simulator (IREWTS) for learning and understanding the principles of Radar EW and Countermeasures. IREWTS Classroom trainer offers: -

- Radar Environment Simulation
- De-interleaving Digital ECM Receiver
- Pulse Analysis Tool
- Electronic Combat Waveform Generator
- Oscilloscope & Spectrum Analyses capability

What you will learn:

- Introduction to the EW terminology
- Maritime EW Operation
- Radar Theory
- EA Principles
- EA Techniques in the Maritime environment
- Typical Systems
- Anti-Ship Missile Defence (ASMD)
- Modern Threats
- Library Techniques Generation considerations
- Training considerations and Operational Con Ops
- Practical application of techniques against emitters using Integrated Radar EW Test & Training System (IREWTS)

Who Should Attend?

Anyone involved in formulating strategy, policy, doctrine, processes or procedures for Maritime EW capability in a deployed, operational context. Anyone involved in the practical application, delivery and conduct of Maritime EW in a deployed, operational context.

Key Organisations:

- Ministry of Defence (Maritime)
- HQ Navy
- Defence Science and Technology Agencies / Defence Research Lab/Institutes
- All Government agencies, industries and organisations interested in developing Maritime EW capability

Duration – 1 Week

Location – Mercury EW Ltd – Training Facility



Communications Principles Course

Introduction

This course is used to teach delegates new to the EW environment the underpinning communications knowledge required prior to enrolling on other Mercury EW courses. It addresses the basics of communications, including: common terminology, properties of electricity, EM radiation and the EM Spectrum, how different forms of communications are created and propagated through various mediums, as well as the properties and functions of different types of antenna. A range of practical exercises are used to compliment the theoretical training. On completion of the course delegates will be well placed to understand communications and their effect on EW operations.

What you will learn:

- Basic mathematics associated with communications
- Properties of electricity
- Basics of communications
- Antenna theory
- Waveforms
- Modulation techniques (AM, FM, PM)
- Propagation
- Direction Finding (DF) Theory

Who Should Attend?

Military and civilian COMINT/EW practitioners from Strategic, Operational and Tactical backgrounds. Anyone involved in the practical application, delivery and conduct of EW in a deployed, operational context.

Key Organisations:

- Ministry of Defence
- HQ Joint, Army, Navy and Air Force
- All Government agencies, industries and organisations interested in the development of COMINT/EW capability

Duration - 1 Week

Location - Mercury EW Ltd – Training Facility



Land Electronic Warfare (EW) Course

Introduction

This course addresses the key management functions regarding the planning, preparation, deployment and sustainment of Land EW capability in a deployed operational context. This includes the processes and procedures required to effectively manage EW capability. It will focus on the employment of EW assets and how best to utilise these assets in a variety of operational environments. There will be a detailed focus on Counter Radio Controlled Improvised Explosive Devices (RCIEDs) covering threats, equipment, technology cycle, interoperability and Tactics, Techniques and Procedures (TTPs). It will also address key subjects that EW has significant influences upon; ISTAR, Information Operations and Battlespace Spectrum Management as well as the roles and responsibilities of military personnel involved in EW Equipment Procurement, specifically; Procurement Cycle, Capability Integration, Statements of Requirement, Requirements Capture and the various associated key document outputs. The course will also facilitate a number of practical based exercises designed around realistic deployed scenarios in order to consolidate student learning.

What you will learn:

- The Electronic Threat
- ES principles and techniques - Search, Intercept, Direction Finding and Analysis of signals at radio and RADAR frequencies
- EA principles and techniques – Jamming, Deception and Neutralisation.
- EP principles and techniques - Active and passive measures
- The capabilities and limitations of Land EW equipment
- The deployment principles and cycle relating to EW capability and operations
- Counter Radio Controlled Improvised Explosive Device principles
- EW in Information Operations
- ISTAR principles
- Duties of the User Representative in the procurement of EW capability.

Who Should Attend?

Anyone involved in formulating strategy, policy, doctrine, processes or procedures for Land EW capability in a deployed, operational context. Anyone involved in the practical application, delivery and conduct of Land EW in a deployed, operational context.

Key Organisations:

- Ministry of Defence
- HQ Army
- Defence Science and Technology Agencies
- Defence Research Lab/Institutes
- All Government agencies, industries and organisations interested in the development of Land EW capability

Duration - 2 Weeks

Location - Mercury EW Ltd – Training Facility



COMINT/EW Intercept Operator Course

Introduction

This course addresses the underpinning knowledge and generic practical skills required of a COMINT/EW Intercept Operator. Delegates will be provided with a thorough appreciation of the principles, practices and application of COMINT/EW in modern warfare. Specifically, the practical elements of the course include receiver search and intercept skills, activity logging, locating (through Direction Finding), analysis and exploitation of information, and reporting methods. Practical training realism is enhanced through the use of a market leading COMINT Portable Manpack System, the course will also focus on the employment of COMINT/EW assets and how best to utilise these assets in a variety of operational environments.

What you will learn:

- Introduction to EW Terminology.
- The Electronic Threat.
- ES principles and techniques - Search, Intercept, Direction Finding and Analysis of radio frequency signals of interest.
- EA principles and techniques – Jamming, Deception and Neutralisation.
- EP principles and techniques - Active and passive measures.
- The capabilities and limitations of Land EW equipment.
- The deployment principles and cycle relating to EW capability and operations.
- Receiver search and intercept techniques.
- Logging methods and processes, and recording of activity.
- Analysis techniques and exploitation.
- Activity Reporting.

Who Should Attend?


Military and civilian COMINT/EW practitioners from Strategic, Operational and Tactical backgrounds. Anyone involved in the practical application, delivery and conduct of EW in a deployed, operational context.

Key Organisations:

- Ministry of Defence
- HQ Joint, Army, Navy and Air Force
- All Government agencies, industries and organisations interested in the development of EW capability

Duration - 2 Weeks

Location - Mercury EW Ltd – Training Facility



Counter Remote Controlled Improvised Explosive Device (C-RCIED) Course

Introduction

This workshop addresses key areas regarding the planning, preparation, deployment and sustainment of Electronic Counter Measures used specifically to inhibit Radio Controlled Improvised Explosive Devices (RCIEDs) in a deployed operational context. This includes the processes and procedures required to effectively manage ECM capability. It will cover the RCIED threat; an historical insight into how devices have developed in different environments. Different types of IEDs will be discussed, focusing on the requirements of an RCIED. The workshop will focus in detail on the requirements of ECM equipment and the various methods of jamming that can be used to inhibit RCIEDs. It will also concentrate on the Technology Cycle; exploiting emerging threats and developing new waveforms or new equipment as a timely response to the threat. Interoperability between national and other nations ECM equipment will be addressed as well as ECM interoperability with communications. There will also include a session covering Tactics, Techniques and Procedures relating to ECM usage by both dismounted patrols and vehicle convoys. The workshop will also facilitate practical based exercises designed around realistic deployed scenarios in order to consolidate student learning.

What you will learn:

- The RCIED threat.
- Principles of RCIEDs.
- Principles of ECM.
- ECM equipment requirements.
- Jamming techniques.
- Technology Cycle – Exploitation, waveform/equipment development, TTP development.
- Interoperability.
- TTPs.

Who Should Attend?

Anyone involved in formulating strategy, policy, doctrine, processes or procedures for Counter RCIED capability in a deployed, operational context. Anyone involved in the practical application, delivery and conduct of Counter RCIED in a deployed, operational context.

Key Organisations:

- Ministry of Defence
- HQ Army
- Defence Science and Technology Agencies
- Defence Research Lab/Institutes
- All Government agencies, industries and organisations interested in development of Counter RCIED capability

Duration - 3 Days

Location - Mercury EW Ltd – Training Facility



EW for Engineers Course

Introduction

This course addresses a range of operational functions regarding the planning, preparation, deployment and sustainment of Electronic Warfare capability in a deployed operational context. It will cover all doctrinal aspects of EW but from a tactical EW operator and manager's perspective. This includes the processes and procedures required to effectively manage EW capability as well as the functional requirements of various EW equipment. It will focus on the employment of EW assets and how EW managers would best utilise these assets in a variety of operational environments. There will also be a detailed focus on Counter Radio Controlled Improvised Explosive Devices (RCIEDs) covering threats, equipment, technology cycle, interoperability and Tactics, Techniques and Procedures (TTPs). The course will also facilitate a number of practical based exercises designed around realistic deployed scenarios in order to consolidate student learning.

What you will learn:

- ES principles and techniques - Search, Intercept, Direction Finding and Analysis of signals at radio and RADAR frequencies.
- EA principles and techniques – Jamming, Deception and Neutralisation.
- EP principles and techniques - Active and passive measures.
- The capabilities and limitations of Land EW equipment.
- The deployment principles and cycle relating to EW capability and operations.
- An introduction to Maritime EW.
- An introduction to Air EW.
- Counter Radio Controlled Improvised Explosive Device principles.

Who Should Attend?

Engineers or project managers working for Defence sector EW organisations who require a detailed understanding of EW from a military and operational perspective.

Key Organisations:

- Ministry of Defence
- HQ Army
- Defence Science and Technology Agencies
- Defence Research Lab/Institutes
- All Government agencies, industries and organisations interested in development of EW capability

Duration - 1 Week

Location - Mercury EW Ltd – Training Facility



R&S® - Introduction to Radar Signal Collection Course

Introduction

The radar signal collection course is a mixture of classroom theory and practical signal collection exercises. Students learn the theory and principles behind radar signal collection as well as the challenges facing collectors in the modern radar environment. Due to the specific requirements of radar signal collection, we recommend that students complete a basic radar theory / radar fundamentals course prior to starting the introduction to radar signals collection course.

With the use of R&S® ELINT Training System students will be introduced to the multi-channel ELINT processors (tuner and scanner), Instantaneous Frequency Measurement (IFM) receivers, I/Q recorders and an operator's database. Students will have sufficient operator skills and knowledge to enable manipulation of this ELINT collection system in an operational context.

What you will learn:

- “Hands on” scenario-based collection training
- Radar signal collection techniques
- Challenges faced by radar signal collectors

Who Should Attend?

Military and Civilian Radar and EW practitioners from both Operational and Engineering backgrounds. Programme & Project Managers, Systems Engineers and Technical Staff.

Key Organisations:

- Ministry of Defence
- Defence Science and Technology Agencies
- Defence Research Lab/Institutes
- All Government agencies, industries and organisations interested in development of EW capability

Duration - 2 Week (Dates on application)

Location - Mercury EW Ltd – Training Facility



R&S® - Introductory Radar Signal Analysis Course

Introduction

The introductory radar signals analysis course provides students with a practical introduction to radar parameters, the relationship between them and the different techniques required to analyse a radar signal.

This course is predominantly practical. It relies heavily on R&S®TPA technical pulse analysis software to illustrate the different techniques required to analyse a radar signal. This course requires the students to have a very good working knowledge of radar theory and radar applications.

This course provides a “hands on” introduction to radar parameters. Students will have to analyse and document 12 synthetic radar signals using the R&S®TPA software. The students will first analyse a simple radar signal, with relatively easy-to-measure parameters, and quickly progress to more complex radar signals that use different interpulse modulation types, intrapulse modulation and radio frequency (RF) agility. The signals that are used in the course are designed to highlight analysis procedures and to ensure that students develop the correct techniques to enable them to analyse commonly observed radar signals.

The introductory radar signals analysis course is a prerequisite to the intermediate radar signals analysis course.

What you will learn:

- Hands on” training using R&S®TPA software
- Introduction to radar parameters
- Introduction to interpulse modulation (pulse repetition interval modulation)
- Introduction to radio frequency (RF) agility
- Introduction to intrapulse modulation (modulation on the pulse)
- Analysis of 12 accurate radar waveforms generated by a
- radar signal scenario generator

Who Should Attend?

Military and Civilian Radar and EW practitioners from both Operational and Engineering backgrounds. Programme & Project Managers, Systems Engineers and Technical Staff.

Key Organisations:

- Ministry of Defence
- Defence Science and Technology Agencies
- Defence Research Lab/Institutes
- All Government agencies, industries and organisations interested in development of EW capability

Duration - 2 Weeks

Location - Mercury EW Ltd – Training Facility



R&S® - Intermediate Radar Signal Analysis Course

Introduction

This course builds on the analysis techniques covered in the introductory radar signal analysis course and describes further techniques that enable students to deal with more complex analysis challenges. The students will learn how to recognise a number of commonly encountered interpulse modulation types, the most effective ways to measure them and the advantages and disadvantages of each modulation type. The course contains modules focusing on intrapulse modulation types, how to analyse them and the advantages and disadvantages of each modulation type.

Detailed descriptions of different scan techniques commonly used by radar systems and how to identify and measure them are also contained in the analysis modules. One of the modules also includes a detailed description of FMCW signal analysis. The techniques used to recognize and analyse RF agile radar signals are also elaborated on during the course. All signal analysis is conducted using the R&S®TPA software. As in the introductory radar signal analysis course, students will be required to analyse and measure the parameters of a total of 13 synthetic radar signals.

What you will learn:

- “Hands on” training using R&S®TPA software
- Analysis of 13 accurate radar waveforms generated by a radar signal scenario generator
- Intrapulse modulation description and analysis techniques
- Intrapulse modulation description and analysis techniques
- Scan description and analysis techniques
- Analysis of frequency-modulated continuous wave (FMCW) signals
- Analysis of RF agile signals

Who Should Attend?


Military and Civilian Radar and EW practitioners from both Operational and Engineering backgrounds. Programme & Project Managers, Systems Engineers and Technical Staff.

Key Organisations:

- Ministry of Defence
- Defence Science and Technology Agencies
- Defence Research Lab/Institutes
- All Government agencies, industries and organisations interested in development of EW capability

Duration - 2 Weeks

Location - Mercury EW Ltd – Training Facility



Battlespace Spectrum Management Course

Introduction

This course addresses the key elements of spectrum management in a deployed operational context. This includes the organisation, policy, processes and procedures required to effectively manage the electromagnetic spectrum. It will address the principles of effective spectrum management including acquisition, planning and deployment of spectrum dependent capability; the spectrum management process from mission preparation to deployment, sustainment and recovery; multinational doctrine and proposed national, joint and single service policy, doctrine, organisation and procedures; examples of good practice and operational anecdotes; practical exercises based on realistic deployed scenarios.

What you will learn:

- The principles of spectrum management
- The spectrum management process
- Spectrum management considerations during the plan/prepare phase of an operation
- Spectrum management considerations during the operate/sustain phase of an operation
- Spectrum management considerations during the recover/transition phase of an operation
- The importance of spectrum monitoring and spectrum situational awareness
- The use of technology to assist the spectrum manager
- An awareness of spectrum dependent systems and key stakeholders
- How spectrum management can be integrated into the mission planning cycle
- How to produce a spectrum management plan
- How to coordinate the spectrum requirements with all key stakeholders
- How to mitigate and resolve radio-frequency interference

Who Should Attend?

Anyone involved in formulating strategy, policy, doctrine, processes or procedures for spectrum management in a deployed, operational context.

Anyone involved in the practical application, delivery and conduct of spectrum management in a deployed, operational context.

Key Organisations:

- Ministry of Defence
- HQ Joint, Army, Navy and Air Force
- Defence Science and Technology Agencies
- Defence Research Lab/Institutes
- All Government agencies, industries and organisations interested in development of Electronic spectrum management

Duration - 1 Week

Location - Mercury EW Ltd – Training Facility



i2 Analyst Notebook

Introduction

The essential introductory course to IBMi2 Analyst Notebook. Learn how to employ visual analysis tools and techniques in Law Enforcement, Defence, National Security and Private Sector investigations. Discover how to develop charts from intelligence reports, telephone billings, financial statements and a multitude of other data sources. Learn to search, expand and manage your charts and how to produce intelligence based charts for briefings, evidential use and intelligence driven investigations.

This is an interactive experience using a combination of lecture, hands-on work, exercises and student-instructor interaction.

What you will learn:

- Understand chart elements – Entities, Links and Properties
- Creating Charts
- Searching Charts
- Importing Data
- Analytical Tools
- Creating Charts for dissemination
- Create association, sequence of events and commodity flow charts
- Import external structured data to produce charts
- Interrogate charts with a variety of analytical tools including Filtering and Social Network Analysis
- Produce Histograms, Geospatial Mapping, and Heat Matrix
- Create charts, tables for briefing and dissemination

Who Should Attend?

Anyone involved in conducting intelligence analysis and the production of intelligence reports derived from disparate data sources in the Law enforcement, Defence and Security sectors.

Key Organisations:

- Ministry of Defence
- HQ Joint, Army, Navy and Air Force
- Defence Science and Technology Agencies
- Defence Research Lab/Institutes
- Defence and Security agencies

Duration - 1 Week

Location - Mercury EW Ltd – Training Facility

Glossary of Terms

AM	Amplitude Modulation
ASMD	Anti-Ship Missile Defence
CATS	Credit Accumulation Transfer Scheme
CCIRM	Collection Coordination Intelligence Requirements Management
CDS	Course Document Set
COMINT	Communications Intelligence
C-RCIED	Counter Radio Controlled Improvised Explosive Device
DSAT	Defence Systems Approach to Training
DF	Direction Finding
ELINT	Electronic Intelligence
EA	Electronic Attack
EM	Electro Magnetic
EP	Electronic Protection
ES	Electronic Support / Electronic Surveillance
EW	Electronic Warfare
ESM	Electronic Support Measure
ECM	Electronic Counter Measure
EPM	Electronic Protection Measure
FTS	Formal Training Statement
FM	Frequency Modulation
HQ	Head Quarters
IREWTS	Integrated Radar EW Test & Training System
ISTAR	Intelligence, Surveillance, Target Acquisition, Reconnaissance
JSP	Joint Service Publication
MoD	Ministry of Defence
PDW	Pulse Descriptor Word
PM	Phase Modulation
RF	Radio Frequency
TTP	Tactics, Techniques & Procedures
UK	United Kingdom



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