LEONARDO ACADEMY (LINCOLN)
COURSE PROSPECTUS

LEONARDO

PROSPECTUS

Cyber Electromagnetic Activities Training
The Leonardo Academy (Lincoln) provides extensive academic and practical training in Cyber Electromagnetic Activities (CEMA) through the provision of courses and workshops that include the theory and applications of Cyber Operations, Electronic Warfare (EW) and EW Operational Support. CEMA related courses are outlined within this Prospectus.

Electronic Warfare Product Training
As the UK's largest provider of Electronic Warfare equipment, systems and integrated solutions, Leonardo provides product training to a range of UK and International customers to meet their specific needs.

Working closely with the customer, the training team takes a consultative approach throughout to clearly understand the Customer's requirements in order to provide the most appropriate training solution. Details of specific product training courses are available on request.

End-to-end CEMA capability
By combining academic courses and workshops covering Cyber, EW and EWOS with Leonardo's vast complement of product training, Leonardo Customers are able to benefit from training solutions that provide an end-to-end CEMA capability at a national level tailored to any (or all) Leonardo platforms.

Academic CEMA training is also able to support the product ranges of other numerous platform manufacturers, providing a complete turn-key solution to national CEMA needs.

CONTENTS

ELECTRONIC WARFARE (EW)

Leonardo training is modularised and can be adapted to suit individual customer needs. Short courses or workshops can be created from parts of longer courses or workshops.

For example, a short workshop for senior managers to introduce the structure of EW and EW Operational Support (EWOS) can be adapted from elements from the EW001 Fundamentals Course, EW002 Electro-Optics Course and EWOS001 Introduction to Electronic Warfare Operational Support Organisation Course. This example is shown in the prospectus as EW003, but any combinations of training material are possible.

EW 001 — ELECTRONIC WARFARE FUNDAMENTALS

15 Days
Course Length

12 Students
Maximum
Per Course

Entry Criteria
None

Course Overview
This course provides students with an understanding of the principles of Electronic Warfare (EW), Electronic Warfare Operational Support (EWOS) and the production of mission data within an EW Centre (EWC). The course includes Electromagnetic (EM) wave, Radar and Electro Optic (EO) theory, Radar Parametric Analysis and EW principles.

Intended Audience
This introductory course is suitable for personnel with a requirement to understand the fundamental principles related to EW.

Course Modules
- The theoretical principles and applications of sensors, weapon systems and EW equipment
- Electromagnetic (EM) wave theory
- Antenna theory, design and application
- The definitions used within divisions of EW
- The defining characteristics of emitter parametrics
- The principles and techniques used in Radar Systems
- The principles and techniques used in EM Spectrum Operations & Signal Processing
- The principles and techniques used in Electronic Attack, and Electronic Protection
- The purpose and use of Radar threat weapon system components
- The principles of carrying out Radar function analysis
- The concepts involved in the role of mission data production and testing

EW 002 — ELECTRONIC WARFARE ELECTRO-OPTICS

10 Days
Course Length

12 Students
Maximum
Per Course

Entry Criteria
None

Course Overview
This course is to provide students with an understanding of the application of Electronic Warfare in relation to Electro-Optics systems, including lasers.

It covers the principles of EO, specific EO systems used by the military and addresses the threats to military EO systems.

Intended Audience
Personnel whose employment deals directly with military applications of EO.

Course Modules
- Sources of infrared signature
- EO detector types
- EO detector materials
- EO imaging and systems
- EO missile - target tracking
- EO ESM
- EO ECM
- EO Missile EPM

EW 003 — ELECTRONIC WARFARE MANAGEMENT WORKSHOP

2 Days
Course Length

12 Students
Maximum
Per Course

Entry Criteria
None

Course Overview
This workshop provides Electronic Warfare (EW) and EW Operational Support (EWOS) managers with an understanding of the principles of EW and EWOS. The workshop will provide an overview of the key components and management of the (EWOS) lifecycle.

Intended Audience
This workshop is suitable for EW and EWOS managers requiring a high-level overview of the principles and organisation of EW and EWOS activities.
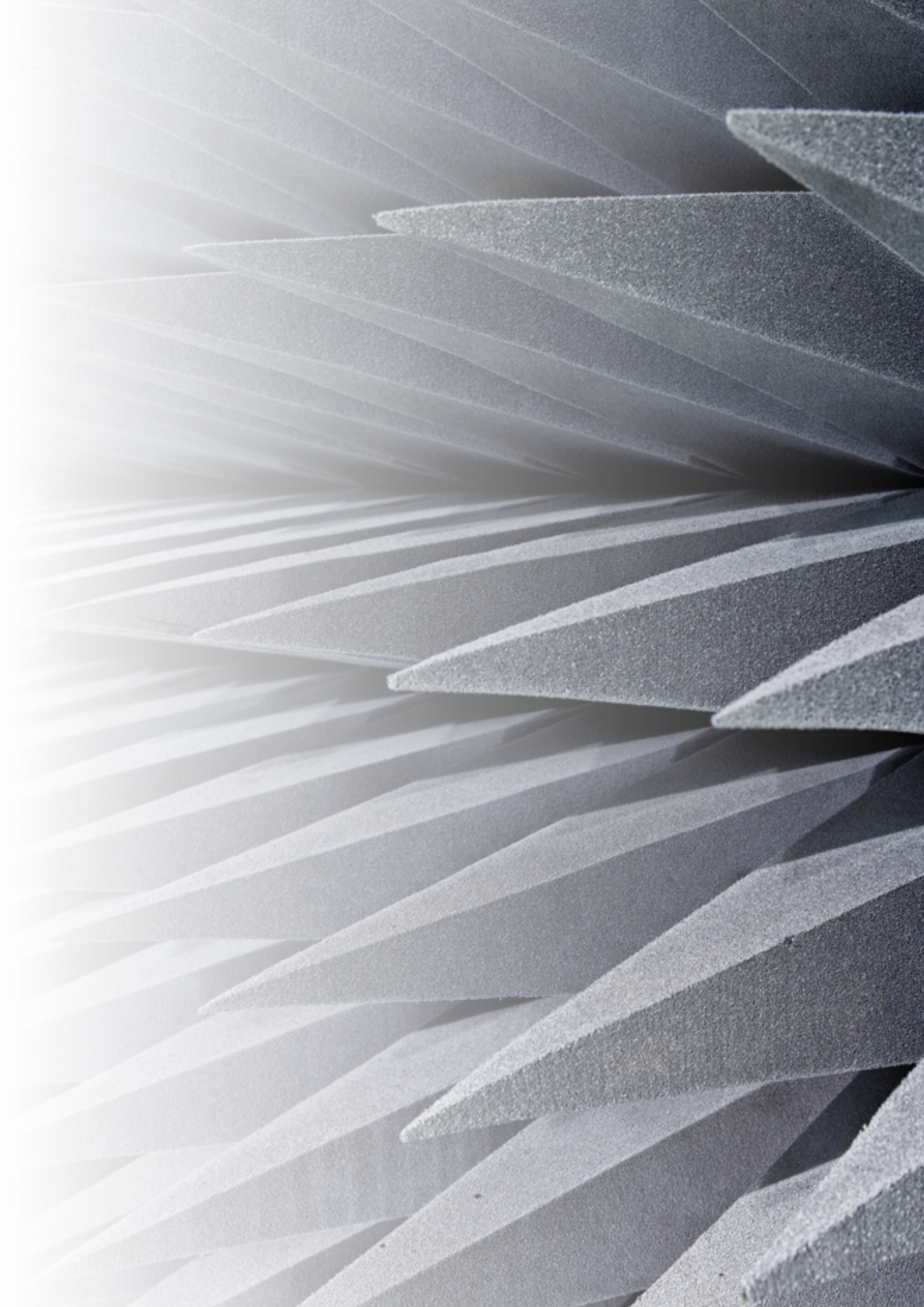
Course Modules
- Structure of EW
- RF and EO sensors and systems overview
- Threat overview
- The EWOS lifecycle
- The EWOS Organisation and EWOS skill sets
- Meeting operational requirements

ELECTRONIC WARFARE OPERATIONS (EWO)

EWO 001 — OPERATIONAL ELECTRONIC WARFARE WORKSHOP

5 Days
Workshop Length

12 Students
Maximum
Per Workshop

Entry Criteria
None

Workshop Overview
This workshop provides personnel from Air, Land or Naval operations with an appreciation of how Electronic Warfare (EW) in multi-force operations is supported by EW Operational Support (EWOS). The workshop discusses the structure behind mission data collection & analysis and the adaptation of data into passive and active EW (and related) systems that have direct operational implications to the warfighter. It covers how operational personnel can benefit from and help develop the EWOS lifecycle.

Intended Audience
Operational personnel with a need to understand EWOS within an operational context.

Workshop Content
- Data requirements of operational EW
- Collection of data
- Operational application of EW data
- The role operations play in supporting the EWOS lifecycle
- Explore future EW technologies and impact on EW lifecycle

EWO 002 — ELECTRONIC WARFARE MISSION PLANNING AND BRIEFING WORKSHOP

4 Days
Workshop Length

12 Students
Maximum
Per Workshop

Entry Criteria
None

Workshop Overview
This workshop explains the requirements, content and scope of EW mission planning and briefing to front-line personnel engaged in operations. It includes both the role of EW in general missions and the planning and briefing of specific EW tactical missions.

Intended Audience
Operational personnel newly employed within an EW Intelligence or operational environment.

Workshop Content
- The Intelligence Picture
- Intelligence gathering and sources of information
- EW situational awareness & Electronic Order of Battle
- The EW Threat and its relationship to Mission Planning
- Topography and Mission Profiling
- Mission Planning Tools
- Strategic vs Tactical view of the battlespace, and how they relate to Mission Planning & Briefing
- Platform-specific EW requirements and logistics
- EW Mission-specific data support
- The role & fidelity of EW information databases
- Mission Briefing structure & content overview

EWO 003

EW MISSION DEBRIEFING WORKSHOP

2 Days
Workshop Length

12 Students
Maximum
Per Workshop

Entry Criteria
EWO 001
or equivalent

Workshop Overview
This workshop explains the requirements and content of EW mission debriefing to front-line personnel engaged in operations. It includes both debriefing the EW aspects of general missions in support of the EW Operational Support process and the debriefing of missions that have a specific EW role.

Intended Audience
Operational personnel employed within an EW operational environment.

Workshop Modules
- Mission Reporting & Debriefing
- The Intelligence Picture
- The role of accurate & timely EW debriefing
- Tactical vs Strategic EW data collection
- Post-Mission Debrief Analysis & Reporting
- EW Feedback & Information Management

ELECTRONIC WARFARE OPERATIONAL SUPPORT (EWOS)

EWOS 001
COMPOSITION AND FUNCTIONS OF AN ELECTRONIC WARFARE OPERATIONAL SUPPORT ORGANISATION

4 Days
Course Length

12 Students
Maximum
Per Course

Entry Criteria
EW 001
or equivalent

Course Overview
This course provides students with the knowledge to understand the composition, functions and day-to-day activities of a typical Electronic Warfare Operational Support (EWOS) organisation.

Intended Audience
This course builds upon the Electronic Warfare Fundamentals course, this course is aimed at personnel that require further knowledge of a typical EWOS organisation.

Course Content
- Departments within an EWOS organisation
- EWOS skill-sets
- Development of an EW Database
- Sources of EW Data
- Parameter Limits and Ambiguities
- Business Continuity

EWOS 002
ELECTRONIC WARFARE EQUIPMENT SPECIFIC DATABASES

5 Days
Course Length

12 Students
Maximum
Per Course

Entry Criteria
EW 001

(Recommend attendance on EWOS 001, an equivalent course or relevant experience)

Course Overview
This course provides the student with an understanding of the processes and procedures required to create and maintain a national database and an equipment-specific database.

Intended Audience
Personnel that require greater awareness databases relevant to equipment and there importance as a key component of the Electronic Warfare Operational Support lifecycle.

Course Content
- National EW Database
- Equipment-specific Database
  - Specification
  - Creation
  - Maintenance
  - Sub-Set Creation
- Equipment-specific Database Development

EWOS 003 — ELECTRONIC WARFARE MISSION DATA GENERATION

3 Days
Course Length

12 Students
Maximum
Per Course

Entry Criteria
EW 001
EWOS 002

(Recommend attendance on EWOS 001, an equivalent course or relevant experience)

Course Overview
This course provides students with the necessary understanding of the procedures and processes that are employed as part of Mission Data (MD) file production.

Intended Audience
Personnel involved in the production and maintenance of MD within an Electronic Warfare Operational Support environment.

Course Content
- MD Pre-requisites
- MD Processes – Inputs and Outputs
  - Specification
  - Build
  - Test
  - Support

EWOS 004 — ELECTRONIC WARFARE MISSION DATA TEST AND VERIFICATION

5 Days
Course Length

12 Students
Maximum
Per Course

Entry Criteria
EW 001
EWOS 002
EWOS 003

(Recommend attendance on EWOS 001, an equivalent course or relevant experience)

Course Overview
This course provides students with the necessary knowledge to understand and implement Mission Data (MD) file testing as part of the MD production lifecycle.

Intended Audience
Personnel involved in the production and maintenance of Mission Data in an Electronic Warfare Operational Support environment.

Course Modules
- Test & verification
- Test & verification of an Integrated EW System
- Test & verification tools
- Introduction to Emitter Modelling
- Mission Data test methodology

ELECTRONIC WARFARE
POST-MISSION DATA ANALYSIS

4 Days
Course Length

12 Students
Maximum
Per Course

Entry Criteria
EW 001
EW 002
EWOS 002
EWOS 003
EWOS 004

(Recommend attendance on EWOS 001, an equivalent course or relevant experience)

Course Overview
This course will provide students with the necessary understanding of Post-Mission Analysis (PMA) procedures and processes.

Intended Audience
Personnel involved in the PMA within an EWOS environment.

Course Content
- PMA data
- PMA tools
- PMA methodologies
- Post-Mission tasks

EWOSC MANAGEMENT WORKSHOP

5 Days
Workshop Length

12 Students
Maximum
Per Workshop

Entry Criteria
None

Workshop Overview
This workshop will provide the student with practical knowledge in the breadth and depth of EWOS, the EWOS lifecycle and sovereign capability in support of a requirement to develop an Electronic Warfare capability.

Intended Audience
Personnel taking up management positions within an EWOS organisation.

Workshop Modules
- Electronic Warfare Operational Support - Introduction
- The EWOS Lifecycle
- Managing the internal and external functions related to:
  - Establishment of required output
  - Establishment of required capacity
  - Establishment of roles and responsibilities within an EWOS Centre
  - Staff development and training
  - Workflow management and Quality Assurance
  - Mission Data requirement specifications
  - The Intelligence and Data Gathering Cycle
  - EW Knowledge Base (Database) Management: Collation/Analysis/Storage/Distribution
  - EW Mission Planning
  - Mission Data generation
  - Mission Data Testing & Verification
  - EW Tactics and Countermeasures Development
  - EW trials
  - Product compliance
  - EW Mission Replay and Debrief
  - Post mission/trials/testing analysis

EWOS 007
SOFTWARE IN THE LOOP TESTING WORKSHOP

10 Days
Workshop Length

12 Students
Maximum
Per Workshop

Entry Criteria
EW 001

Workshop Overview
This workshop covers the concepts and applications of Software in the Loop (SWIL) testing of Mission Dependent Data using proprietary tools.

Intended Audience
Personnel working within an EW Mission Data Test & Validation role.

Workshop Modules
- The role of SWIL testing
- The capabilities and limitations to SWIL testing
- Emitter Testing & Platform Linking
- Mission Data & Operational Software compatibility testing
- Mission Data Emitter Parametric Data confirmation
- EW Mission Data Performance testing
- Verification of performance parameters
- Emitter Ambiguity Analysis & Confidence Levels
- Quality Assurance & Verification

EWOS 008
HARDWARE IN THE LOOP TESTING WORKSHOP

5 Days
Workshop Length

12 Students
Maximum
Per Workshop

Entry Criteria
EW 001

Workshop Overview
This workshop covers the concepts and applications of HWIL testing of Mission Dependent Data using proprietary tools.

Intended Audience
Personnel working within a Mission Data Test & Validation role.

Workshop Modules
- The role of HWIL testing
- HWIL testing advantages and limitations
- HWIL Rig overview
- Supported Configurations
- Rig Environment & supporting technologies
- Simulation programming
- Practical scenarios & target modelling

END TO END FLIGHT-LINE TESTING WORKSHOP

2 Days
Workshop Length

12 Students
Maximum
Per Workshop

Entry Criteria
None

Workshop Overview
This workshop covers the concepts and applications of the methods and equipment used in the testing of EW equipment prior to missions. The course includes the role of end-to-end mission survivability testing using proprietary software tools.

Intended Audience
Operational and technical personnel involved in the programming or use of Flight Line Testing using the latest generation of Flight Line Testing equipment.

Workshop Content
- The purpose and application of end-to-end testing of platform detection systems
- The processes used to perform and record end-to-end testing of EW systems
- End-to-End equipment overview
- Calibration and Maintenance requirements
- Test design and methodologies
- End-to-End test data generation and accuracy
- Post-test reporting and documentation
- The future of testing of equipment readiness and its integration with mission readiness

ELECTRONIC WARFARE TACTICS AND COUNTERMEASURES (EWTCM)
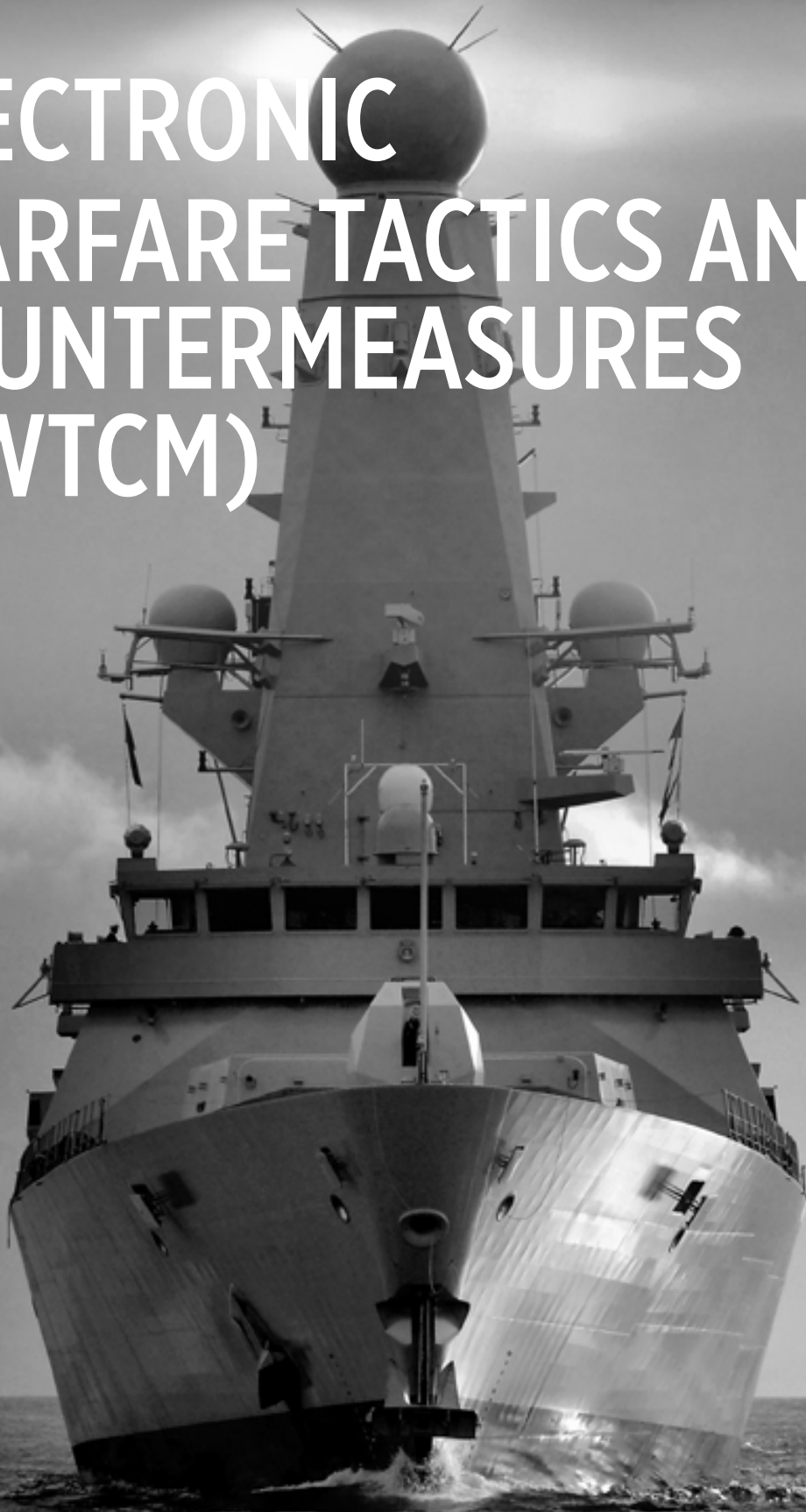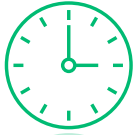
EWTCM 001

ELECTRONIC COUNTERMEASURES

10 Days
Course Length

12 Students
Maximum
Per Course

Entry Criteria
EW 001
EW 002

Course Overview
The Electronic Countermeasures (ECM) course will provide students with an understanding of ECM and Electronic Protective Measures (EPM). The course will provide personnel with in-depth knowledge and skills to understand and exploit ECM techniques.

Intended Audience
Personnel involved in the production and maintenance of ECMs within an Electronic Warfare Operational Support organisation.

Course Content
- Electronic Warfare (EW) and Threats concepts
  – Missile guidance theory
  – IR detector head technologies
  – RF and IR EPM
- EW Noise Jamming
  – Specific noise techniques
  – Data requirements
- EW Deception Jamming
  – Specific deception techniques
  – Data requirements
- EW Expendables
  – Chaff, flares and active decoys
- EW defensive manoeuvring

EWTCM 002

INTRODUCTION TO EW THREAT VULNERABILITY ANALYSIS AND COUNTERMEASURES DEVELOPMENT

20 Days
Course Length

12 Students
Maximum
Per Course

Entry Criteria
EW 001
EW 002
EWTCM001

Course Overview
This course offers students an essential foundation in the operational processes and procedures used in the generation of generic radar and infrared threat tactics and countermeasures.
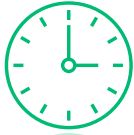
Intended Audience
Personnel involved in the production and test of EW tactics and countermeasures.

Course Content
- Introduction to TVACD
- The TVACD Process
- Example Radio Frequency (RF) TVACD
- Example Infrared TVACD
- TVACD exercise

EWTCM 003 — ADVANCED EW THREAT VULNERABILITY ANALYSIS AND COUNTERMEASURES DEVELOPMENT

60 Days
Course Length

12 Students Maximum Per Course

Entry Criteria
EW 001
EW 002
EWTCM 002

Course Overview
This course provides students with a greater understanding in relation to processes, threat effector analysis, conceptual countermeasure development and verification methodologies required to carry out the role of a TVACD analyst.

Intended Audience
Personnel involved in the production and test of EW tactics and countermeasures, primarily focussed towards personnel to be employed in a TVACD Analyst role.

Course Content
- Matlab/Simulink for TVACD
- Effector Systems Analysis
- Anti-Aircraft Artillery Ballistics
- Missile Propulsion Analysis
- Missile Aerodynamics Analysis
- Missile Control Analysis
- Warhead Analysis
- Detailed RF and IR System Analysis
- Countermeasures Development
- Theory of Modelling and Simulation
- Modelling RF and IR Countermeasures
- Verification of Countermeasures
- TVCAD Processes Design and Use

EWTCM 004 — EW MODELLING AND SIMULATION WORKSHOP
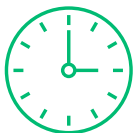
20 Days
Workshop Length

6 Students Maximum Per Workshop

Entry Criteria
EWTCM 001
EWTCM 002
EWTCM 003

Workshop Overview
This workshop is designed for TVACD specialists involved in the modelling of platforms, weapons and the general Electromagnetic (EM) environment.

Intended Audience
Personnel with experience in TVACD who wish to enhance their Modelling and Simulation skills using proprietary TVACD modelling tools.

Workshop Content
- Introduction to Matlab and Simulink
- The use of Matlab for TVACD
- The use of Simulink for TVACD
- The use of Matlab for the calculation of TVACD data
- The design of task specific TVACD tools using Matlab and Simulink
- Introduction to Leonardo TVACD modelling tool, Tactical Engagement Simulation Software (TESS)
- The amendment of TESS source code to meet specific requirements
- Introduction to the design principles associated with effectors (i.e. warhead selection, propulsion selection etc.)
- Discussion on the early initial assessment of threat systems
- The selection process for propulsion, and the methodologies associated with analysis of propulsion systems, including a worked example for both a rocket and air breathing weapon systems
- The aerodynamics associated with guided weapons
- An introduction to the methods of missile control and the assessment of these systems
- Introduction to Anti-Aircraft Artillery (AAA) systems and the assessment of key parameters
- An introduction to the design and assessment of effector warheads
- The verification of countermeasures developed by modelling and simulation
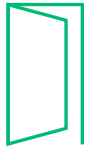- The use of EW ranges to validate countermeasures developed in modelling

EWTCM 005
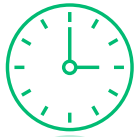
EW TACTICS TECHNIQUES AND PROCEDURES WORKSHOP

3 Days
Workshop Length

12 Students
Maximum
Per Course

Entry Criteria
None

Workshop Overview
This workshop explores the scope of EW Tactics Techniques and Procedures to an introductory level of understanding of these concepts within EW.

Intended Audience
Personnel taking up positions in EWOS roles involving the formulation of Tactics, Techniques and Procedures

Workshop Content
- Understand general operations (Air, Sea and Land)
- Understand the general application of techniques in Air, Sea and Land operations including:
    - Chaff techniques
    - Flares techniques
    - Stealth techniques
    - Decoy techniques
    - Manoeuvre techniques
    - CEMA techniques
    - Electro-magnetic Pulse techniques.
- Understand the general application of tactics including:
    - Jamming tactics
    - Chaff tactics
    - Flare tactics
    - Manoeuvre tactics
- Understand the need for and application of procedures
    - The need for standard operating procedures
    - The derivation of procedures
    - Amending procedures
- The EWOS Cycle and its role in the establishment and development of tactics, techniques and procedures

ELECTRONIC WARFARE INTELLIGENCE (EWI)

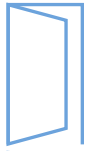## EWI 001 INTRODUCTION TO ELECTRONIC INTELLIGENCE

10 Days
Course Length

12 Students
Maximum
Per Course

Entry Criteria
EW 001

Course Overview
This course delivers an essential foundation in Electronic Intelligence (ELINT) operations and technology. The aim of the course is to provide students with concepts, techniques and tools for the generation of intelligence from intercepted emitter parameters.

Intended Audience
Personnel involved in the field of ELINT and Intercept Analysis.

Course Content
- Mathematics for analysis
- The completion of incomplete data
- Introduction to the Electronic Order of Battle
- Production of a generic data profile
- Threat library production and variations for mission data sets
- The application of data support to mission data production and to the Electronic Warfare programming process
- Emitter ambiguity analysis
- Electronic Warfare Support Measures receivers in the Mission Data (MD) detection process
- The production of MD documentation
- The production of a generic set of MD
- Testing MD
- Emitter and Pulse Analysis Tools
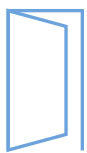- The implications of future technology on data definition production and support

EWI 002 ADVANCED ELECTRONIC INTELLIGENCE

10 Days
Course Length

12 Students
Maximum
Per Course

Entry Criteria
EWI 001

Course Overview
This course delivers training in the format and use of Electronic Intelligence (ELINT) tools. The aim of the course is to provide students with examples of techniques and tools used for the generation of intelligence from intercepted emitter parameters.

Intended Audience
Personnel involved in the field of ELINT and Intercept Analysis.

Course Content
- Emitter and Pulse Analysis Tools
  - Types
  - Scope of use
  - Algorithmic capabilities
  - Intercept file formats
  - Manual and automatic operation
  - Single and batch emitter management
  - Plotting intercepts
  - Identifying intercepts
  - Benefits
- Performance Analysis Tools
  - Types
  - Weapon System
  - Weapon performance
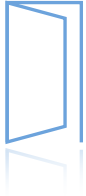 - EW Engagement Scenario

EWI 003 ELECTRONIC WARFARE DATABASE MANAGEMENT SYSTEMS

10 Days
Course Length

12 Students
Maximum
Per Course

Entry Criteria
EW 001
EW 002

Course Overview
This course delivers training in the requirements of a national EW Data Management System. The aim of the course is to provide students with examples of the data relationships within EW, and from these, to understand the requirements and operation of a National EW database.

Intended Audience
Personnel involved in the input and extraction of EW and EW related data for operational employment on systems and for intelligence activities.

Course Modules
- Role and structure of a National EW Database
- Scope of data required within an EW Database
- The role of the Equipment Specific Database (ESDB)
- Security of an EW Database
- Data provision including sources of data, closed and open source, classified and unclassified
- Data integrity including the management of the accuracy of data and the trustworthiness of data
- Support to the National EW Database
- Support from the National Intelligence collection assets
- Data input including baseline theatre library creation, threat and object associations, objects, weapons, emitters, platforms and countermeasures
- Air, Sea and Land platforms
- Geographical locations
- Other objects within the database
- Data including equipment specific emitter models, equipment specific countermeasures, testing data, models, scenarios and ambiguity analysis
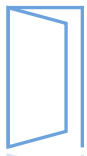
EWI 004 — FUNCTION ANALYSIS WORKSHOP

4 Days
Workshop Length

12 Students
Maximum
Per Workshop

Entry Criteria
None

Workshop Overview
This workshop provides students with the skills required to estimate the function of an emitter from its general parameters.

Intended Audience
Personnel employed in mission data set production and verification, intercept analysts and those embarking on Electronic Intelligence duties.

Workshop Content
- Introduction to Radar Function Analysis
- Choice of parameters
  – Frequency
  – Pulse Duration
  – PRI/PRF
  – Scan rate/type
  – Beamwidth
  – Power
- Parametric relationships
- Radar emitter types
  – Land based search radars
  – Shipborne search radars
  – Airborne search radars
  – Weapon system radars
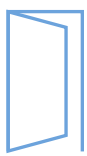- Determining radar emitter type from observed parameters

EWI 005 — ANALYSIS OF RECORDED DATA WORKSHOP

2 Days
Workshop Length

12 Students
Maximum
Per Workshop

Entry Criteria
None

Workshop Overview
This workshop provides training on proprietary tools to develop and practice Intercept Analysis skills, including measurement of emitter parametrics and modulations and the development of these into data for inclusion in an EW Data Management System.

Intended Audience
EW operators/analysts and programmers

Workshop Modules
- Introduction and the need for Pulse Data Analysis
- Background Theory
  – PRI Agility
  – Pulse Width agility
  – RF Agility
  – Scan Pattern
  – Continuous Wave
- Graph Types
  – Time Chart
  – Histogram
  – Scatter
  – History

EWI 006 — OPEN SOURCE DATA COLLECTION WORKSHOP

3 Days
Workshop Length

12 Students
Maximum
Per Workshop

Entry Criteria
None

Workshop Overview
This workshop explores the scope and viability of data available from open sources and the effects of applying Open Source Intelligence methodology to intelligence gathering.
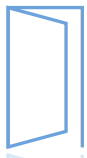
Intended Audience
Personnel involved in planning and collection of data from open sources.

Workshop Modules
- Introduction to Open Source Intelligence (OSINT)
  - Terms, application and characteristics
- Context within Intelligence
  - The Intelligence warfighting function
  - The Intelligence process
- Planning OSINT
  - Plan, focus, tasking and definition
- Preparing OSINT activities
  - Forums, documents, broadcasts, internet search, military open days
- Media Sources
  - Traditional and internet
- Internet Sources and search tools
  - Practical internet search sessions

EWI 007 — ELECTRONIC ORDER OF BATTLE DERIVATION WORKSHOP

3 Days
Workshop Length

12 Students
Maximum
Per Workshop

Entry Criteria
A general knowledge of EW

Workshop Overview
This workshop explains and practices the skills of developing an Electronic Order of Battle (EOB).

Intended Audience
Personnel involved in high level determination of EOB scoping

Workshop Modules
- Establishing the requirements of the EOB and defining its purpose
- Nature and uses of an EOB
- Role of the EW Database Management System(s)
  - Structure and types
- The EOB within a master EW database
  - Example EOB output
- EOB Structure
- Human-machine interface
- Populating an EOB
  - Planning data entry
  - Population methods
- Quality Control

EWI 008 — MISSION DATA REQUIREMENT SPECIFICATION WORKSHOP

5 Days
Workshop Length

12 Students
Maximum
Per Workshop

Entry Criteria
A basic
knowledge
of military
operations is
required.

Workshop Overview
This workshop explains, instructs and then practices the skills required in developing a requirement specification from an Electronic OOB.
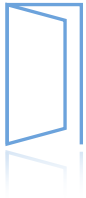
Intended Audience
Personnel with tasking responsibilities for Mission Data requirements within an Operational environment or EW Operations Support Centre.

Workshop Content
- Defining the need
- Defining the Mission: intended use, range and scope considerations
- The definition of rules of engagement and policy guidance
- EW Mission Data tasking agency liaison and data requirements
- MDS priority and schedule considerations
- Situational Awareness and generation of Operational Environment Requirements using tools and data from EW databases
- Generation of Platform/System lists and associated parameters
- Producing EW Mission Data Requirements, including the definition of non-cooperative & cooperative platforms
- EW Mission Data Priority Management & display table methodology
- Advising the MDS Test & Verification with the requirements for scenario testing
- Generation of User Briefing Guide documentation
- Briefing of Mission Data content and anticipated performance for the front-line users
- Quality Assurance, configuration control & compliance documentation

EWI 009 — COMMUNICATIONS INTELLIGENCE FOUNDATION

15 Days
Course Length

12 Students
Maximum
Per Course

Entry Criteria
None

Course Overview
This course provides students with the knowledge to undertake Communications Intelligence (COMINT) roles and to understand its associated components. It reviews the fundamentals of COMINT, relating each topic to the broader and more complex requirements of the strategic and tactical Customer. The course identifies the different parts of the Electromagnetic Spectrum (EMS) and the associated communications utilised within, and identifies the types of transmission and suitable commercial solutions required for demodulation.

Intended Audience
Personnel that would like to understand the fundamental principles around COMINT.

Course Content
- Introduction to COMINT
- Intelligence Feeds
- Spectrum Awareness
- Branches and Disciplines
- Radio Wave Theory
- Tri Service Operations
- Intelligence Production Tools
- Analysis and Fusion Management
- Introduction to Complex Signals
- Practical COMINT Demodulation
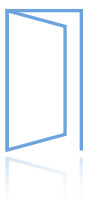
COMMUNICATIONS INTELLIGENCE ADVANCED

7 Days
Course Length

12 Students
Maximum
Per Course

Entry Criteria
- EWI 009

Course Overview

This Advanced Course focuses on the management of Communications Intelligence (COMINT) assets and the skills required to plan, deploy, sustain and recover assets. The course aims to develop management skills to enable students to understand key capabilities and select the correct asset for the correct task in either a static or mobile role.

Intended Audience

Personnel that would like to build on the knowledge gained from the COMINT Foundation course.

Course Content

- Review of underpinning knowledge
- Strategic Intelligence
- Multiple Asset Management
- Spectrum Awareness
- Branches and Disciplines
- Reporting Processes
- Syndicate exercises

Master of Science (MSc) in Military Electronic Mission Protection
The MSc in Military Electronic Mission Protection is a course of instruction over 2 years that has been developed in collaboration between Leonardo and a leading UK University. The 2 year programme comprises one academic year of instruction followed by one year of student research to develop a dissertation. The second year is optional, and a student graduating successfully from year one only will receive a Post Graduate Diploma in Military Electronic Mission Protection. Please contact us for further details.

CYBER SECURITY (CYSEC)

Leonardo has been the Cyber Defence Mission Partner for NATO since 2014.

Leonardo and its partners have developed a world class cyber training programme which takes students, with appropriate pre-requisite skills, to the level of Cyber Warrior, capable of operating in a high threat, highly challenging security environment.

The cyber training programme is broken into 3 parts, as follows:

- Cyber Baseline
- Cyber Advanced Specialism
- Enterprise & Tradecraft

CySec 001 BASELINE – CORE CYBER

12 Students
Maximum
Per Course

Course Overview
This course provides training on some of the core components that sit at the heart of cyber security. Predominantly practically based, this course will provide baseline knowledge and an opportunity to assess student's aptitude for some of the more specialist training to follow.

Intended Audience
Cyber Security Practitioners

Course Length
5 Days

2 Days

3 Days

5 Days

Course Modules
- **OSINT** – Areas covered within this topic include: digital footprints, social media, the dark web, advanced searching and legislation. This section will culminate in a 'Capture the Flag' exercise running throughout a training day
- **Encryption** – This topic will cover a number of areas in relation to encryption including: encoding, modern encryption methods and the application of encryption methods
- **Malware** – As part of this topic the student will be introduced to the malware families before moving on to low level malware analysis
- **Cyber Defence** – This topic covers areas including: incident containment, incident response, incident forensics and incident investigation.

Entry Criteria
Students are required to have an understanding of: Fundamentals of Computing, Data Storage and Memory, Network Architecture, TCP/IP V4/6, MS Windows, Linux, Sniffer/ Protocol Analyser tools, Virtualisation, WIFI, Bluetooth, Scripting, Databases, Web Application Skills and communication protocols.

CySec 002 | BASELINE – CYBER MANAGEMENT

10 Days
Course Length

12 Students
Maximum
Per Course

Entry Criteria
- CySec 001

Course Overview
This course introduces the student to some of the management and governance aspects in relation to cyber security.

Intended Audience
Cyber Security Practitioners

Course Modules
- ISO 27001 Information Security Management System to include ISO 27001 implementation
- Lead Auditing – students will gain experience in planning, leading and reporting audits
- Governance, Generic Management & System Audit Process
- IA Architecture Fundamentals – covering the core types of IA models and the best way to validate architecture with clients, stakeholders and users.
- Security Architecture Concepts
- Information Assurance Methodologies
- Innovation and Service Improvement

On completion of baseline courses, students will have the opportunity to move on to an advanced specialist course. Advanced courses available are as follows:

CySec 003   Advanced – Cyber Incident Response and Hunting

CySec 004   Advanced – Cyber Digital Forensics Investigations

CySec 005   Advanced – Penetration Testing and Red Teaming

On completion of advanced specialist courses, students will have the opportunity to move on to the final part of the programme. For this part students will develop and practice practical skills within representative environments, building on knowledge and skills gained from earlier courses:

CySec 006   Enterprise and Tradecraft – Enterprise Tooling

CySec 007   Enterprise and Tradecraft – Wargaming

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