ISA Working Group 2020 Webinar Series
(Webinar will commence at 11:05 am)

Assurance in a Connected World
Webinar 2 – ISA WG position statement on Independent Environment Assurance (IEA) and its relation to Independent Safety Assurance (ISA) activities

Panellists
Steve Beech – Speaker and Author of the ISA WG Position Paper
Adrian Payne – Speaker, ISEA Experience
Cynthia Chia – Speaker, The View of the IEA
Stephen Hatton – ISA WG Chair
Pete Hutchison – ISA WG Deputy Chair
John Canning – ISA WG Secretary
ISA WG Terms of Reference – Purpose

• Promote the ISA role as a means of providing independent safety assurance of products to the supplier, purchaser and user
• Promote the ISA role of a safety professional in standards
• Support professional development by defining minimum standards, identifying training that meets minimum standards and supporting resources
• Support professional ISAs by developing guidance and providing information that affects their role
Housekeeping

• Q&A (Zoom Webinar)
  • Use Q&A button to type your question (don’t use chat button; don’t raise hand)
  • Use ‘thumbs up’ to vote up or vote down a question (once only)
  • Panellists will select and pose questions
  • Questions not answered today will be recorded and answers provided afterwards

• Feedback
  • Please read and complete the survey (on the IET registration page)
  • Short re-cap article after the event
  • Let us know if you’re interested in joining the ISA Working Group
The Speakers

• **Steve Beech** — ISA WG Member since 2002, FIMechE, specialist in maritime, facility and explosives safety, background of ISA activities in the Defence Sector

• **Adrian Payne** — Safeguard Engineering Limited — A Chartered Naval Architect with over 26 years experience in the defence and the offshore / oil and gas industries. Has held positions as safety manager on major projects and as a consultant assisting the Ministry of Defence in defining safety policy and monitoring compliance, and providing independent assurance services

• **Cynthia Chia** — Cobalt Blue Consulting — A former EA regulator and Chartered Environmentalist with IEMA, Cynthia has 25 years’ environmental management experience and is an experienced IEA and Environmental Case author across all defence domains. Cynthia is a IEMA registered Environmental Auditor
Guidance – Published

• General
  • ISA Working Group Terms of Reference
  • What is Independent Safety Assessment (ISA)? in Review for update

• Professional
  • ISA Code of Practice for Independent Safety Assessors (ISAs)
  • Competency Framework for Independent Safety Assessors (ISAs)

• Substantive Guidance
  • Assessment of Safety Related Compliance Claims (SRCC)
  • Guidance on the Procurement of Independent Safety Assessors

• Guidance Notes / Position Papers
  • Guidance on the Use of Accident and Incident Data by ISAs
  • Documents useful to Independent Safety Assurance
  • Position Statement on Security, Safety and ISA
Webinar 2 – ISA WG position statement on Independent Environment Assurance (IEA) and its relation to Independent Safety Assurance (ISA) activities

• Requirements (specific to sector / customer) for single Independent Assurance Teams covering both safety and environmental elements of design and / or operation.
• Overlap between the ISA and IEA activities, and therefore guidance.
• Should the ISA WG also be developing its scope to include IEA guidance?
Next Event in the Series

Webinar 3: Procuring Software Intensive Systems – Pitfalls and Recommendations

Wednesday 18 November at 11:00
(Register at IET Events)

Are you interested in joining the ISA Working Group?

Let us know by e-mailing SEP@theiet.org
IET ISA WG – ISEA Experience

Adrian Payne
04/11/2020
Agenda

- Introduction
- Example ISEA projects
- Specific Joint ISEA audits
- Lessons Learnt
- Key take homes
Introduction

Adrian Payne

- BEng Hons Ship Science;
- Fellow of RINA;
- Member of SaRS;
- Safety manager roles;
- Policy development;
- SCR development;
- Auditing experience.
ISEA Projects

• Defence Maritime Services;
• Queen Elizabeth Class;
• Amphibious Projects;
• Commercially Supported Shipping;
• Mine Counter Measures;
• T45 Destroyers.
ISA Scope & Competence

• Huge range in subjects from:
  • Organisational management structures, processes, procedures, etc.;
  • Port/Ship operating practices;
  • Ship interfaces;
  • Systems and equipment.

• Audits span the entire client organisation and associated supply chain.

• ISA works requires:
  • the highest competency/knowledge base;
  • Robust and in some instance detailed knowledge of Regulatory framework;
  • Highest level of professional integrity.
Specific Joint ISEA Audits

- Key Examples:
  - Organisational SEMSs and SEMPs;
  - Base management and implementation of SEMPs;
  - Pyrolysis system;
  - Highly Mechanised Weapon Handling System.

- Approach:
  - Joint audit plan;
  - Joint interviews/ documentation reviews;
  - Utilisation of common audit finding categorisation.

- Reporting:
  - Joint report;
  - Findings can and are presented and discussed at 3* level, so rock solid domain knowledge required.
Lessons Learnt

- Joint auditing requires close liaison between the ISA and IEA;
- Mutual respect for validity of respective findings;
- Can be crossover with respect to applicability of findings, e.g.:
  - Documentation management;
  - Robustness of meeting construct;
  - Hazardous Material Data Sheets;
  - Validity of test and trials;
  - Etc.
- Audit reporting tailored to client organisational construct.
Key Take Homes

• Joint ISA and IEA audits can be undertaken;
• Joint ISA and IEA auditing can be highly effective;
• ISA and IEA require mutual compatible levels of competencies to undertake effective joint audits;
• ISA and IEA require very different technical domain skill sets;
• Very high levels of competency required to act as ISA/IEA.
Overview

• Introduction
• Typical IEA Scope
• Specialist Knowledge & Skills
• IEMA Auditor Registration Scheme
Typical IEA Scope*

- The IEA’s drivers...
Legislation & Standards

- International Conventions & Treaties
- EU Directives & Regulations
- UK Legislation & Regulatory Guidance
- Standards, Code of Practices
- Organisational Policies & Procedures
Legislation

Trends

DUMP & DISPOSE

END-OF-PIPE CONTROLS

DESIGN

Raw material extraction and processing
Manufacturing
Recycling
Input, Waste
End-of-life
Repair and reuse
Packaging and distribution
Product use
Typical IEA Scope*

• Cradle to grave (cradle), through life approach;
• Inputs and outputs of a product system/ activity/ development considering aspects:
  – Air Emissions & Climate Change
  – Water Consumption & Emissions
  – Waste (Hazardous, Non-hazardous)
  – Land Contamination
  – Nuisance (e.g. odour, noise, dust & PM)
  – Biodiversity & Ecology
  – Cultural heritage (e.g. Archaeology)
  – Social Impact (e.g. local traffic, employment)
  – Resources Use (Renewable, Non-renewable)
  – Materials Security & Hazardous Materials
• Direct, indirect and cumulative impacts.
• Applicable legislative obligations and clients’ corporate policy requirements.

* Subject to project/ contract specific requirements.
Specialist Knowledge & Skills

• Qualifications:
  – Environmental sciences qualifications;

• Experience:
  – Broad applied knowledge of environmental management and at least 1 area of specialism (e.g. water, waste).
IEMA Auditor Registration Scheme

• Internationally recognised specialist Register;
• Different levels;
• Split between:
  – EMS Auditor (EMS audits only)
  – Environmental Auditor (broader audits including due diligence, legislative compliance risk or focus areas e.g. waste audits).
• Requirement for annual demonstration of CPD.
IEMA Auditor Registration Scheme

• Registration Applications are assessed on a points system with points awarded for differing levels of
  – Academic Qualifications
  – Membership of Professional Bodies
  – Relevant Training
  – Relevant Experience
    • Qualifying Experience (Core, Non-Core, Complementary)
    • Supervised Audits
    • Sector Experience
  – Written and Oral Examination (for higher levels)
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<thead>
<tr>
<th>EXAMPLES: CORE WORK</th>
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<td>• Single/Multi-issue environmental audits covering one or more of the following:</td>
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<td>- Life-Cycle Assessments/products audits</td>
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<td>- Energy usage audits</td>
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<td>- Waste minimisation audits</td>
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<td>- Water usage audits</td>
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<td>- Legislative compliance audits</td>
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<td>- Activity audits</td>
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<td>- Issue audits</td>
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<td>- Atmospheric/pollution audits (not solely monitoring or sampling exercises)</td>
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<td>- Contaminated Land/pollution audits (not solely monitoring or sampling exercises)</td>
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<td>- Effluent/pollution audits (not solely monitoring or sampling exercises)</td>
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<td>- IPPC compliance audits</td>
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<td>- Chemical concerns/REACH – chemical usage audits</td>
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<td>- Producer Responsibility audit (i.e. WEEE)</td>
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<td>- Packaging Waste</td>
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<td>- Energy Usage</td>
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<td>- Climate change audits</td>
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<td>- Soil audits</td>
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<td>• Combined Health, Safety and Environment audits</td>
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<td>• Combined audits including sustainability</td>
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<td>• Environmental risk assessments, environmental liability or due diligence audits for companies involved in pre-acquisition, decommissioning, divestiture or merger activities</td>
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<td>• Climate Change Agreement, Greenhouse Gas Verification</td>
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<td>• Clean Development Mechanisms (CDM), Joint Initiatives (JI)</td>
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<td>• Project Acorn – BS8555/Green Dragon stage audits</td>
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Appendix 1 - Qualifying Experience

Description of Activity/Audit:
- EMS implementation (and auditing) including:
  - Writing of environmental management manuals or formulating environmental management programmes strategies.
  - Co-ordinating or managing the implementation of comprehensive environmental management systems (other than ISO 14001).
  - Co-ordinating or managing the implementation of ISO 14001.
  - Co-ordinating or managing implementation of the EC Eco-Management and Audit Scheme (EMAS).
- Review of existing performance, environmental policies or environmental management practices.
- Environmental review for the purpose of the Environmental Protection Act 1990 formulation or writing of company Environmental Policy/Code of Professional Conduct/Statement for internal use or public issue.
- Formulation of quantifiable environmental objectives and targets as a basis for subsequent audit programmes and strategies.
- Running environmental audit or environmental management systems seminars/workshops or lecturing at conferences on relevant topic areas.
- Commissioning audits.
- Managing company wide environmental audit programme.
- Audit ‘follow-up’ management.
- IPPC applications.
- Environmental waste reviews, and other similar reviews (including hotel and leisure industry schemes).
- Eco-homes and BREEAM.
- Code for Sustainable Homes.
- Climate adaptation.
- Conducting audits for ISO 14001 Assessment.
- Conducting audits for EMAS Assessment.
- External Independent verification of environmental audit (environmental audit statement/composite environmental report).
- Development or writing of environmental audit guidelines, protocols, manuals, checklists, matrices or rating systems.

Appendix 2 - Examples of Complementary Work Experience

- Environmental Impact Assessment.
- Territorial ecological surveys.
- Freshwater ecological surveys.
- Landscape/visual assessment.
- Nature conservation/landscape planning.
- CDM/HAZID/HAZOP risk assessment.
- Dust, noise, vibration, odour, litter assessments.
- Atmospheric pollution dispersion modelling/monitoring.
- Microbiological/haematological monitoring/geological audits/asbestos audits.
- Multi-issue health and safety audits/CEM/assessment.
- Pollution incident/spillage investigations/pollution amelioration.
- Contaminated land/surface water/groundwater studies.
- Landfill gas/soil/ground monitoring.
- Waste/hazardous waste management.
- Process engineering/engineering feasibility studies/plant construction and design.
- BAT/BAT1/BAT2/BAT3 studies/pollution amelioration.
- Enforcement (pollution) work.
- Recycling.
- Building assessments/BREEAM studies.
- Environmental information technology.
- Audit software development.
- Development of quality management system/total quality management system/ISO 9000.
- ISO 9000 audits/ certification.
- Expert witness/legal advice to audit teams.
- Preparation of IPPC (Integrated Pollution Prevention and Control) application.
- Forest Stewardship Council Chain of Custody audit (FSC-COC).

Appendix 3 - Industrial Sectors (NACE Codes)

A. Agriculture, Hunting and Forestry
B. Mining
C. Manufacturing
  DA. Food products, Beverages and Tobacco
  DB. Textiles and Textile products
  DC. Leather and leather products
  DD. Wood and wood products
  DE. Pulp, Paper and paper products, publishing and printing
  DF. Coke, refined petroleum products and nuclear fuel
  DG. Chemicals, chemical products and manufactured fibres
  DH. Rubber and Plastic products
  DI. Non-metallic mineral products
  DJ. Basic metals and fabricated metal products
  DK. Machinery and equipment N.E.C.
  DL. Electrical and Optical equipment
  DM. Public and Government Services
  DN. Construction
  DO. Manufacturing N.E.C.
E. Electricity, Gas and Water supply
F. Construction
G. Wholesale and Retail trade, Repair of motor vehicles and personal and household goods
H. Hotels and general catering
I. Transport, Storage and Communication
J. Financial intermediation
K. Real estate, renting and business activities
L. Public Administration and Defence; Compulsory Social Security
M. Education
N. Health and Social Work
O. Other Community, social and Personal Service activities (excluding sewage and waste disposal)
P. Private households with employed persons
Q. Extra-territorial organisations and bodies
GET IN TOUCH

Cynthia Chia Ai Li  BSc MSc MIEMA CEnv EA
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Background

• Requirement (specific to sector / customer) for the parallel assessment of Safety and Environmental protection
• Risk – Common to safety and environmental assessment
• Impact – Environmental assessment only
• Rule based compliance, based on Legislative and Regulatory requirements
• No clear boundary between the two disciplines, as a single hazard generating a safety risk, may present different environmental risks and impacts
• Legislation and Regulatory frameworks for Safety and Environment are distinct (and may even be in conflict sometimes)
• From the perspective of the safety assessor the safety of a system can depend in part on matters relating to environmental protection
Basis of Opinion

• The relationship between safety risk and environmental risk;
• Implications of environmental protection for technical aspects of safety assessment;
• Implications of environmental protection for professional aspects of ISA.
ISA WG Opinion

• Recognises the importance of addressing environmental risks and impacts
• Recognises that safety and environmental requirements may need to be balanced
• Believes that harm to humans from both safety risks and environmental impact and risks needs to be addressed in a coordinated way
• Encourages the development and use of processes, methods and standards that co-ordinate both environmental protection and safety
• Recommends that if a system could have an environmental impact that may result in harm to humans, the safety and environmental programmes are co-ordinated
• Recognises IEMA as the body which provides advice, guidance, and registration of environmental auditors