



COURSE OVERVIEW HE2351
Certified Radiation Protection Officer (RPO)
Industrial & Security X-ray Screening Applications

Course Title

Certified Radiation Protection Officer (RPO):
Industrial & Security X-ray Screening Applications

Course Date/Venue

Session 1: September 28-October 02, 2026/TBA
Meeting Room, Al Bandar Rotana,
Dubai Creek, Dubai, UAE
Session 2: November 02-06, 2026/TBA Meeting
Room, Al Bandar Rotana, Dubai
Creek, Dubai, UAE

Course Reference

HE2351

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs



Course Description



This practical and highly-interactive course includes practical sessions and exercises where participants carryout surface contamination and dose rate measurements and surveys. Theory learnt in the class will be applied using our state-of-the-art equipment.



This practical and highly interactive course is customized for Hutchison Ports Sohar's HSSE and field personnel supporting container-terminal X-ray cargo scanning. It prioritizes industrial and security-screening exposure scenarios rather than medical applications. Learning is reinforced through operational case studies, radiation surveys, electronic personal dosimetry workflows, risk-assessment workshops and procedure-writing activities.



Special emphasis is placed on managing an occupational dosimetry programme using electronic personal dosimeters (EPDs). Delegates practice dose-record management, data retrieval and verification, investigation of missing or abnormal readings, escalation, corrective action, facility risk assessment and preparation of practical radiation protection procedures and SOPs.



Further, the course will also discuss the radiation protection role in cargo-screening operations, X-Ray fundamentals and scanner technology; the radiation quantities, units and instrumentation, biological effects and health risk; the core protection principles, regulatory framework and standards and Oman regulatory interface and licence readiness; the cargo-scanner safety systems, controlled operations and work planning; and the workplace monitoring and radiation surveys including practical survey and control verification.

During this interactive course, participants will learn the occupational dosimetry programme design, electronic personal dosimeter operation and dose data retrieval and verification; the dose record management, abnormal and missing reading investigation and radiation risk-assessment framework; the hazard identification for cargo scanning, risk evaluation methodology, risk treatment and control selection; reviewing and maintaining assessments and radiation protection program structure; the radiation protection procedures and SOPs; and the document control and implementation, emergency preparedness, event management and practical SOP.

Course Objectives/Outcomes & Benefits for the Participants

Upon the successful completion of this course, each participant will be able to:-

- Get certified as a “*Certified Radiation Protection Officer*”
- Discuss the radiation protection role in cargo-screening operations, X-Ray fundamentals and scanner technology
- Recognize radiation quantities, units and instrumentation as well as biological effects and health risk
- Explain core protection principles, regulatory framework and standards as well as Oman regulatory interface and licence readiness
- Interpret cargo-scanner safety systems and apply controlled operations and work planning
- Carryout workplace monitoring and radiation surveys including practical survey and control verification
- Illustrate occupational dosimetry programme design, electronic personal dosimeter operation and dose data retrieval and verification
- Apply dose record management, abnormal and missing reading investigation and radiation risk-assessment framework
- Employ hazard identification for cargo scanning, risk evaluation methodology, risk treatment and control selection
- Review and maintain assessments and discuss radiation protection program structure
- Develop radiation protection procedures and SOPs and employ document control and implementation, emergency preparedness, event management and practical SOP



Exclusive Smart Training Kit - H-STK®



*Participants of this course will receive the exclusive “Haward Smart Training Kit” (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an overview of all significant aspects and considerations of radiation protection for industrial and security X-ray screening applications, radiation advisors, prospective radiation protection officers/supervisors, HSSE managers and officers, cargo-scanner operators, shift supervisors, maintenance and technical personnel, occupational-dosimetry administrators, contractor representatives; emergency-response personnel and other staff responsible for safe operation or oversight of x-ray cargo-scanning facilities.

Course Fee

US\$ 5,500 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Training Methodology

Our courses employ an interactive, learner-centred methodology that integrates theoretical knowledge with practical application. The training is delivered through a suitable combination of some or all of the following methods, selected according to the course content and learning objectives:

- Instructor-led presentations and facilitated discussions
- Practical workshops and participant presentations
- Hands-on exercises and real-world case studies
- Equipment demonstrations and technical drawings
- Hardware- and software-based simulations
- Gamification & Role Play in soft-skills courses only
- Virtual Reality (VR) and Augmented Reality (AR)
- Instructional videos and other relevant training resources

This blended approach encourages active participation, strengthens practical skills and supports the effective application of acquired knowledge in the workplace.

Learning Design & Customization

This course can be customized to the exact requirements of clients. Haward Technology is so proud of our huge capabilities in tailoring our courses to the training needs of our valued clients.



Course Certificate(s)

- (1) Internationally recognized Competency Certificates and Plastic Wallet Cards will be issued to participants who completed a minimum of 80% of the total tuition hours and successfully passed the exam at the end of the course. Successful candidate will be certified as a “*Certified Radiation Protection Officer*”. Certificates are valid for 5 years.

Recertification is FOC for a Lifetime.

Sample of Certificates

The following are samples of the certificates that will be awarded to course participants:-





- (2) Official Transcript of Records will be provided to the successful delegates with the equivalent number of ANSI/IACET accredited Continuing Education Units (CEUs) earned during the course.

** Haward Technology * CEUs * Haward Technology * CEUs * Haward Technology * CEUs * Haward Technology **

 **Haward Technology Middle East**
Continuing Professional Development (HTME-CPD)

CEUs

CEU Official Transcript of Records

TOR Issuance Date: 14-Nov-25
HTME No. 74851
Participant Name: Waleed Al Habeeb

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
HE2351	Certified Radiation Protection Officer (RPO) Industrial & Security X-ray Screening Applications	Nov 10-14, 2025	30	3.0

Total No. of CEU's Earned as of TOR Issuance Date **3.0**

TRUE COPY

Jaryl Castillo
Academic Director

Haward Technology has been approved as an Accredited Provider by the International Association for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this approval, Haward Technology has demonstrated that it complies with the ANSI/IACET 1-2018 Standard which is widely recognized as the standard of good practice internationally. As a result of their Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for programs that qualify under the ANSI/IACET 1-2018 Standard.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking Continuing Education Units (CEUs) in accordance with the rules & regulations of the International Association for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology is accredited by

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Certificate Accreditations

Haward's certificates are accredited by the following international accreditation organizations: -

-  British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

-  The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units (CEUs)** in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.



Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:

(1) Mr. Saad Bedir: September 28-October 02, 2026



Mr. Saad Bedir, BSc, NEBOSH-IGC, NEBOSH-ENV, is a **Senior Fire, Health, Safety & Environment (HSE) Consultant** with over **30 years** of extensive experience in the **Power, Petrochemical and Oil & Gas** industries. He is a **NEBOSH Approved Instructor** for various certification programs. He is well-versed in the areas of **NEBOSH International General Certificate, NEBOSH Certificate in Environmental Management, Health, Fire, Safety, Security & Environmental Codes of Practice, Legislations and Procedures, Active and Positive Fire Fighting, Fire & Gas Detection Systems, Fire Fighting Systems, Fire Proofing, ESD, Escape Routes, Mobile Crane Operation, Heavy Lifting Equipments, Scaffolding, Rigging Slings, the implementation of OHSAS 18001, ISO 9001, ISO 14001, QHSE Management Planning, Crisis & Business Continuity Management Planning, Emergency Response & Procedures, Industrial Security Risk Assessment & Management, Environmental Impact Assessment (EIA), Behavioural Safety, Occupation Safety, Incident & Accident Investigation, Integrated EHS Aspects, Risk Assessment & Hazard Identification, Environmental Audits, Chemical Handling, Hazardous & Non-Hazardous Waste Management, Confined Space Safety, SHEMS Principles, Process Safety, Basic & Advanced Construction Safety, Mobile Crane Operations, Rig & Barge Inspection, Loss Control, Marine Pollution Hazards & Control, Ground Contamination & Reclamation Processes, Waste Management & Recycling, Clean Energy & Power Saving, FMEA, HAZMAT/HAZCOM, HAZOP, HAZWOPER, HAZID, HSEIA, QRA, Hazardous Area Classification and Radiation Protection**. Presently, he is the **HSE Director** for one of the largest and renowned companies in the Middle East, wherein he takes charge of all HSE and security operations of the company.

Mr. Saad's vast professional experience in directing and managing health, safety and the environment aspects as per **OSHA framework** and guidelines can be traced back to his stint with a few international companies like **Saudi ARAMCO, CONOCO, Kuwait Oil Co. (KOC)**, where he worked as the Field HSE Senior Engineer handling major projects and activities related to the discipline. Through these, Saad gained much experience and knowledge in the implementation and maintenance of international safety standards such as the National Fire Protection Association (**NFPA**), the American Petroleum Institute (**API**), Safety of Life at Sea (**SOLAS**) and Safety for Mobile Offshore Drilling Unit (**MODU**).

Mr. Saad has **NEBOSH** certificate which includes health & safety measures including:

- Fire fighting management system
- Rescue mechanisms (Escaping routes, Rope rescue, and emergency evacuation Plan)
- Machinery Safety requirement
- Occupational health measures & requirement

Mr. Saad has a **Bachelor** degree in **Chemistry**. Further, he is a **Certified Instructor/Trainer**, an **Approved Tutor** in **NEBOSH International General Certificate**, an **Approved Tutor** in **NEBOSH Certificate in Environmental Management**, a **Certified Lead Auditor** for **OHSAS 18001, ISO 9001, ISO 14001** and a **member** of the **Egyptian Syndicate & Scientific Professions**. His passion for development and acquiring new skills and knowledge has taken him all over the Middle East to attend and share his expertise in numerous trainings and workshops.

OR,

(2) Mr. Fred Louw: November 02-06, 2026



Mr. Fred Louw, PGDip, MSc, BSc, is a **Senior Safety Consultant & Radiation Specialist** with over **20 years** of extensive experience in **Radiation Safety/Protection, Radiation Physics, Nuclear Medicine, Radiation Oncology, Radiotherapy, Digital Image Protection, Operational Radiation Protection, Radiological Safety, Nuclear Medicine, Diagnostic Radiology, Accident/Incident & Condition Reporting, Accident/Incident Investigation, Accident & Incident Prevention, HAZOP, SHEQ Management, Root Cause Analysis, Health Risk Assessment, Internal Emergency Planning, Emergency Response, Incident Investigation, Nuclear Security & Emergency, Occupational Hygiene, Conventional Safety, OHSAS, Hazardous Chemical Substances, Quality Control & Assurance, OSH & COID Act, ISO 17025, ISO 90001, OSHAS 18001** and **Radiation Protection Software** such as **IMBA, VARSKIN, RASCAL**, etc. Further, he is also well-versed in Strategic Leadership Skills, Project Management, Accounting Management, Human Resource Management, Communications & IT Management, Conflict Management, Database Development & Administration, Internal Auditing, Communication/Presentation Skills, Budgeting & Negotiation Skills, Report Writing, Labour Law, Statistical Analysis and SQL & Programing Languages. He is currently the **HSE Manager & Chief Scientist (Radiation Protection Specialist)** of **NECSA** wherein he manages the RP function by long term strategic leadership and short-term operational coordination and provide technical support as an RPS and HSE Consultant.

During Mr. Louw's career life, he held significant positions such as the **Radiation Protection Officer (RPO), Radiation Protection Controller, Radiological Protection Consultant, Lead Investigator, Administrator, External Dosimetry Specialist, Medical Physicist, Team Leader** and **Instructor/Trainer** for international companies and agencies such as the South African Bureau of Standards (**SABS**) and Department Medical Physics Universitas Hospital and UFS just to name a few.

Mr. Louw has a **Post Graduate Diploma** in Radiation Protection, a **Master's** degree in **Radiation Protection** and a **Bachelor's** degree in **Physics & Applied Mathematics** from the **University** of the **Witwatersrand** and **University** of **Orange** of the **Free State** respectively. Further, he is a **Certified Instructor/Trainer, Certified Trainer/Assessor** by the **Institute of Leadership & Management (ILM)**, a **Registered Medical Physicist** and a **Registered Professional Natural Scientist**. Moreover, he is an active Chairman/member of South African Association for Physicist in Medicine and Biology (**SAAPMB**), a member of Southern African Radiation Protection Society (**SARPS**), Southern African Radiation Protection Association (**SARPA**), Health Physics Society of America, South African National INES Committee and International Radiation Protection Association (**IRPA**). He has further delivered various trainings, workshops, seminars, courses and conferences worldwide.



Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the workshop for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0930	Radiation Protection Role in Cargo-Screening Operations Terminal Operating Context and Exposure Groups • RPO/RPS Functions, Authority and Accountability • Interfaces with HSSE, Operations, Maintenance and Contractors • Safety Culture and Operational Leadership
0930 – 0945	Break
0945 – 1030	X-Ray Fundamentals & Scanner Technology X-Ray Production and Beam Characteristics • Interaction with Cargo, Shielding and Structures • Fixed Cargo-Scanner Operating Modes • Primary, Scattered and Leakage Radiation Pathways
1030 – 1130	Radiation Quantities, Units & Instrumentation Activity, Exposure, Absorbed and Equivalent Dose • Dose Rate, Cumulative Dose and Operational Quantities • Detector Selection, Response and Limitations • Calibration, Functional Checks and Traceability
1130 – 1215	Biological Effects & Health Risk Cellular and Molecular Effects • Tissue Reactions and Stochastic Effects • Dose-Response and Radiation Detriment • Communicating Risk Without Causing Undue Alarm
1215 – 1230	Break
1230 – 1330	Core Protection Principles Justification and Authorization of Practices • Optimization and ALARA Decision-Making • Dose Limits, Constraints and Investigation Levels • Time, Distance, Shielding and Access Control
1330 – 1420	Applied Review Cargo-Scanner Exposure-Pathway Exercise • Key Terminology Check • Control-Selection Discussion • Questions and Recap
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day One

Day 2

0730 – 0830	Regulatory Framework & Standards International Radiation Safety Framework • National Regulatory Roles and Licence Conditions • Operator, Employer and Worker Responsibilities • Records and Evidence Expected During Inspection
0830 – 0930	Oman Regulatory Interface & Licence Readiness Environment Authority Interface and Current Requirements • RPO/RPS Competence and Appointment Evidence • Facility Authorization Versus Individual Certification • Preparing an Application-Support Evidence Portfolio
0930 – 0945	Break



0945 – 1100	Cargo-Scanner Safety Systems Shielding, Barriers and Exclusion Zones • Interlocks, Emergency Stops and Fail-Safe Design • Warning Lights, Signs and Audible Alarms • Pre-Use and Periodic Safety Checks
1100 – 1215	Controlled Operations & Work Planning Normal, Maintenance and Abnormal Operating Modes • Access Control and Authorization • Contractor and Visitor Arrangements • Permit-to-Work and Isolation Interfaces
1215 – 1230	Break
1230 – 1330	Workplace Monitoring & Radiation Surveys Baseline, Routine and Task-Specific Surveys • Survey Routes and Measurement Locations • Background Correction and Data Quality • Survey Records, Maps and Trending
1330 – 1420	Practical Survey & Control Verification Pre-Use Instrument Checks • Dose-Rate Measurement Technique • Barrier and Exclusion-Zone Verification • Findings, Escalation and Corrective Actions
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Two

Day 3

0730 – 0830	Occupational Dosimetry Programme Design Monitored-Person Classification and Enrolment • EPD Allocation, Wearer Identity and Accountability • Dose Constraints, Alarm Thresholds and Protocols • Employee and Contractor Coverage
0830 – 0930	Electronic Personal Dosimeter Operation EPD Response, Limitations and Wearing Position • Issue, Activation, Return and Storage • Battery, Functional and Communication Checks • Lost, Damaged or Contaminated Devices
0930 – 0945	Break
0945 – 1100	Dose Data Retrieval & Verification Docking, Downloading and System Synchronization • Identity, Timestamp and Assignment Verification • Duplicate, Incomplete and Inconsistent Records • Reconciliation Against Access and Shift Information
1100 – 1215	Dose Record Management Record Structure, Ownership and Confidentiality • Validation, Approval and Correction Controls • Retention, Backup, Security and Audit Trail • Individual Notification and Management Reporting
1215 – 1230	Break
1230 – 1330	Abnormal & Missing Reading Investigation Missing Return or Missing-Data Triage • Unexpected, Elevated or Implausible Readings • Interview, Work-History and Device Checks • Dose Reconstruction, Escalation and Closure
1330 – 1420	Practical EPD Case Workshop Review a Sample Dose-Data Set • Identify Anomalies and Data-Quality Issues • Complete an Investigation Record • Recommend Corrective and Preventive Actions
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Three



Day 4

0730 – 0830	Radiation Risk-Assessment Framework <i>Scope, Context and Assessment Boundaries • People, Tasks, Equipment and Interfaces • Routine, Non-Routine and Emergency Scenarios • Assumptions, Evidence and Competent Review</i>
0830 – 0930	Hazard Identification for Cargo Scanning <i>Beam-On and Access Scenarios • Interlock Bypass or Failure • Maintenance, Testing and Fault-Finding • Unauthorized Access and Human Factors</i>
0930 – 0945	Break
0945 – 1100	Risk Evaluation Methodology <i>Likelihood and Consequence Criteria • Exposure Estimation and Uncertainty • Existing-Control Effectiveness • Initial and Residual Risk Ranking</i>
1100 – 1215	Risk Treatment & Control Selection <i>Elimination and Engineered Safeguards • Administrative and Procedural Controls • Monitoring, PPE and Competency Measures • Action Owners, Priorities and Completion Evidence</i>
1215 – 1230	Break
1230 – 1330	Review & Maintenance of Assessments <i>Periodic and Change-Triggered Review • Equipment, Process and Staffing Changes • Learning from Alarms, Events and Dose Trends • Approval, Version Control and Communication</i>
1330 – 1420	Facility Risk-Assessment Workshop <i>Map a Realistic Scanning Task • Populate a Risk-Assessment Template • Challenge and Improve Selected Controls • Present and Peer-Review Residual Risk</i>
1420 – 1430	Recap <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow</i>
1430	Lunch & End of Day Four

Day 5

0730 – 0830	Radiation Protection Programme Structure <i>Policy, Scope and Governance • Organization, Roles and Delegations • Monitoring, Dosimetry and Assurance Arrangements • Resources, Competence and Management Review</i>
0830 – 0930	Developing Radiation Protection Procedures & SOPs <i>Purpose, Scope and Applicability • Responsibilities, Prerequisites and Precautions • Clear Step-by-Step Operational Controls • Records, References, Appendices and Forms</i>
0930 – 0945	Break
0945 – 1100	Document Control & Implementation <i>Drafting, Technical Review and Approval • Document Numbering and Revision History • Controlled Distribution and Obsolete Copies • Training, Acknowledgement and Field Verification</i>
1100 – 1200	Emergency Preparedness & Event Management <i>Alarm, Interlock Failure and Suspected Exposure • Immediate Actions and Area Control • Notifications, Evidence Preservation and Dose Assessment • Investigation, Reporting and Corrective Action</i>
1200 – 1215	Break

1215 - 1245	Practical SOP & Action-Plan Workshop <i>Draft an EPD Anomaly SOP Section • Define Roles and Escalation Thresholds • Review Against a Quality Checklist • Build a Return-to-Workplace Improvement Plan</i>
1245 – 1330	Integrated Course Review <i>Key Operational Controls • Risk and Dosimetry Decision Points • Procedure-Writing Lessons • Examination Briefing</i>
1300 - 1315	Course Conclusion <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course</i>
1315 - 1415	COMPETENCY EXAM
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch & End of Course</i>

Instruments (Hands-on Practical Sessions)

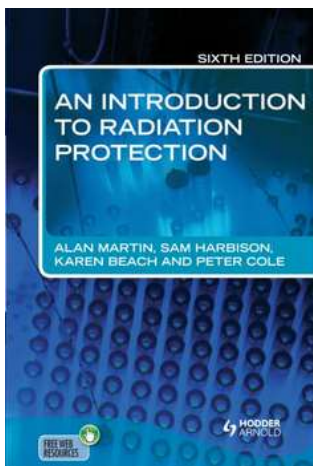
Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using our state-of-the-art instrument “RadEye B20-ER” model.



Thermo Scientific RadEye B20-ER Model

Book(s)

As part of the course kit, the following e-book will be given to all participants:



Title : An Introduction to Radiation Protection
ISBN : 978-1444146073
Author : Alan Martin, Sam Harbison, Karen Beach, Peter Cole
Publisher : CRC Press

Course Coordinator

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