COURSE OVERVIEW TM0207
Certified RCA Leader
Advanced Root Cause Analysis (RCA) Methods & Leadership

Course Title
Certified RCA Leader: *Advanced Root Cause Analysis (RCA) Methods & Leadership*

Course Date/Venue
February 23-27, 2025/Boardroom 2, Elite Byblos Hotel, Al Barsha, Sheikh Zayed Road, Dubai, UAE

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

Course Reference
TM0207

Course Description

This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.

This course is designed to provide participants with an advanced overview of root cause analysis (RCA) methods and leadership. It covers the successful and unsuccessful results, human behavior, accountability, investigator attitude (mindset), investigation steps, job task analysis and the seven-step methodology; the investigation of the factors in evidence preservation, preserve and control evidence collect physical evidence, documentary evidence and human evidence and witness recollection statement; the lines of inquiry, individual mindset, personal and organizational accountability, management control elements and pareto analysis; and establishing contributing factors and validating underlying factors.

During this interactive course, participants will learn to plan corrective actions; carryout report writing by preparing report template, sample incident analysis report template, grade cards/scoresheets and root cause analysis; apply the principles and techniques of effective team management and leadership and investigation of organization and management team; implement action plan follow up; and employ other methodologies on root cause analysis.

Course Objectives

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

- Get certified as a "*Certified RCA Leader*"
- Discuss root cause analysis (RCA) covering successful and unsuccessful results, human behavior, accountability, investigator attitude (mindset), investigation steps, job task analysis and the seven-step methodology
- Identify the scope of problem comprising of problem statement, problem description, difference mapping and extent of condition review
- Investigate the factors in evidence preservation, preserve and control evidence, collect physical evidence, documentary evidence and human evidence and witness recollection statement
- Employ lines of inquiry, individual mindset, personal and organizational accountability, management control elements and pareto analysis
- Illustrate fault tree analysis, task analysis, critical activity charting and actions and factors charting
- Establish contributing factors and validate underlying factors
- Plan corrective actions through action planning, change management, S.M.A.R.T.E.R., safety precedence sequence, barriers and aids analysis, solution selection tree and matrix, contingency plan, effectiveness review and performance indicator development
- Carryout report writing by preparing report template, sample incident analysis report template, grade cards/scoresheets and root cause analysis
- Apply the principles and techniques of effective team management and leadership as well as investigation of organization and management team
- Implement action plan follow up through verification of action plan, documentation, line management accountability, key performance indicators, goal setting and action plan effectiveness verification
- Employ other methodologies on root cause analysis consisting of HSYS, checklists, assessment of safety significant teams (ASSET), safety through organizational learning (SOL) and PROACT™

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 advanced overview of root cause analysis (RCA) methods and leadership for those who are responsible for others in the workplace such as managers, engineers, supervisors, team leaders, HSE engineers, senior HSE officers, foremen and junior production operation staff.

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 RCA Leader*". 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)

Page 1 of 1

CEU Official Transcript of Records

TOR Issuance Date: 12-Oct-17

HTME No. PAR11317

Participant Name: Atif Al Harbi

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
TM0207	**Certified RCA Leader:** *Advanced Root Cause Analysis (RCA) Methods & Leadership*	October 08-12, 2017	30	3.0

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

TRUE COPY

Maricel De Guzman
Academic Director

Haward Technology has been approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 1760 Old Meadow Road, Suite 500, McLean, VA 22102, USA. In obtaining this approval, Haward Technology has demonstrated that it complies with the ANSI/IACET 1-2013 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 1-2013 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

P.O. Box 26070, Abu Dhabi, United Arab Emirates | Tel.: +971 2 3091 714 | Fax: +971 2 3091 716 | E-mail: info@haward.org | Website: www.haward.org

Certificate Accreditations

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**. 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 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.

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:

Mr. Karl Thanasis, PEng, MSc, MBA, BSc, is **Senior Mechanical & Maintenance Engineer** with over **45 years** of extensive industrial experience. His wide expertise includes **Root Cause Analysis (RCA)**, **Piping & Pipeline**, Maintenance, Repair, **Shutdown**, **Turnaround & Outages**, **Maintenance & Reliability** Management, **Mechanical Maintenance** Planning, Scheduling & Work Control, Advanced Techniques in **Maintenance** Management, **Predictive & Preventive** Maintenance, **Maintenance & Operation Cost Reduction** Techniques, Reliability Centered Maintenance (**RCM**), **Machinery Failure** Analysis, **Rotating Equipment Reliability** Optimization & Continuous Improvement, **Material Cataloguing**, **Mechanical & Rotating Equipment** Troubleshooting & Maintenance, **Root Cause Analysis & Reliability** Improvement, **Condition** Monitoring, **Root Cause Failure Analysis** (RCFA), **Steam Generation**, **Steam Turbines**, **Power Generator Plants**, **Gas Turbines**, **Combined Cycle Plants**, **Boilers**, **Process Fired Heaters**, Air Preheaters, Induced Draft Fans, All Heaters Piping Work, Refractory Casting, Heater Fabrication, Thermal & Fired Heater Design, **Heat Exchangers**, Heat Transfer, Coolers, **Power Plant** Performance, Efficiency & Optimization, **Storage Tank** Design & Fabrication, **Thermal Power Plant** Management, **Boiler & Steam** System Management, **Pump** Operation & Maintenance, **Chiller & Chiller Plant** Design & Installation, **Pressure Vessel**, **Safety Relief Valve** Sizing & Selection, **Valve** Disassembling & Repair, Pressure Relief Devices (**PSV**), **Hydraulic & Pneumatic** Maintenance, Advanced **Valve** Technology, **Pressure Vessel** Design & Fabrication, **Pumps**, Turbo-Generator, Turbine **Shaft Alignment**, **Lubrication**, Mechanical **Seals**, Packing, **Blowers**, **Bearing** Installation, **Couplings**, **Clutches** and **Gears**. Further, he is also versed in **Wastewater Treatment** Technology, **Networking** System, **Water Network Design**, Industrial **Water Treatment** in Refineries & Petrochemical Plants, **Piping** System, Water Movement, Water Filtering, Mud Pumping, **Sludge Treatment** and **Drying**, **Aerobic Process** of **Water Treatment** that includes **Aeration**, **Sedimentation** and **Chlorination Tanks**. His strong background also includes **Design** and **Sizing** of all **Waste Water Treatment Plant Associated Equipment** such as **Sludge Pumps**, **Filters**, **Metering Pumps**, **Aerators** and **Sludge Decanters**.

Mr. Thanasis has acquired his thorough and practical experience as the **Project Manager**, **Plant Manager**, **Area Manager - Equipment Construction**, **Construction Superintendent**, **Project Engineer** and **Design Engineer**. His duties covered **Plant Preliminary Design**, **Plant Operation**, **Write-up** of **Capital Proposal**, **Investment Approval**, **Bid Evaluation**, **Technical Contract Write-up**, **Construction** and **Sub-contractor Follow up**, **Lab Analysis**, **Sludge Drying** and **Management** of **Sludge Odor** and **Removal**. He has worked in various companies worldwide in the **USA**, **Germany**, **England** and **Greece**.

Mr. Thanasis is a **Registered Professional Engineer** in the **USA** and **Greece** and has a **Master's** and **Bachelor's** degree in **Mechanical Engineering** with **Honours** from the **Purdue University** and **SIU** in **USA** respectively as well as an **MBA** from the **University of Phoenix** in **USA**. Further, he is a **Certified Internal Verifier/Trainer/Assessor** by the **Institute of Leadership & Management** (**ILM**) a **Certified Instructor/Trainer** and has delivered numerous trainings, courses, seminars, workshops and conferences worldwide.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

30% Lectures
20% Practical Workshops & Work Presentations
30% Hands-on Practical Exercises & Case Studies
20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Course Program

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

Day 1: ***Sunday, 23rd of February 2025***

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Introduction to Root Cause Analysis (RCA)*** *Defining Cause Analysis ● Successful and Unsuccessful Results ● Human Behavior ● Accountability ● Investigator Attitude (Mindset) ● Investigation Steps ● Job Task Analysis ● The Seven-Step Methodology*
0930 – 0945	*Break*
0945 – 1100	***Step 1: Scope the Problem*** *Problem Statement ● Problem Statement Examples ● Problem Description ● Problem Description Examples ● Difference Mapping ● Difference Mapping Examples ● Extent of Condition Review ● Extent of Condition Review Examples*
1100 – 1230	***Step 2: Investigate the Factors*** *Evidence Preservation ● Preserve and Control Evidence ● Collect Physical Evidence ● Collect Documentary Evidence ● Collect Human Evidence ● Witness Recollection Statement ● Interviewing*
1230 – 1245	*Break*
1245 – 1420	***Step 2: Investigate the Factors (cont'd)*** *Lines of Inquiry: Question Generators ● Question Generator: Individual Mindset ● Question Generator: Personal and Organizational Accountability ● Question Generator: Management Control Elements ● Pareto Analysis ● Pareto Chart Template ● Pareto Analysis Examples*
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:	Monday, 24th of February 2025
0730 – 0930	***Step 3: Reconstruct the Story*** *Fault Tree Analysis ● Fault Tree Example ● Task Analysis ● Task Analysis Example ● Critical Activity Charting (Critical Incident Technique) ● Critical Activity Chart Example ● Actions and Factors Charting ● Actions and Factors Chart Example ● Notes*
0930 – 0945	*Break*
0945 – 1100	***Step 4: Establish Contributing Factors*** *Contributing Factor Test ● Five WHYs ● Five WHYs Example ● Exxon-Valdez Oil Spill Example ● Tokai-Mura Criticality Incident Example ● Reactor Trip Example ● Cause and Effect Trees ● Cause and Effect Tree Examples*
1100 – 1230	***Step 4: Establish Contributing Factors (cont'd)*** *Difference Analysis (a.k.a Change Analysis) ● Broken Back Example ● Falling Objects Example ● Breaker Trip Example ● Defense Analysis (a.k.a Barrier Analysis) ● Breaker Fire Example ● Structure Tree Diagrams ● Fishbone (Ishikawa) Diagram*
1230 – 1245	*Break*
1245 – 1420	***Step 4: Establish Contributing Factors (cont'd)*** *Forearm Fracture Example ● Poor Safety Culture Example ● Defense -in-Depth Analysis ● MORT Analysis ● Mort Maintenance Example ● Production/Protection Strategy Analysis ● Safety Culture Analysis*
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:	Tuesday, 25th of February 2025
0730 – 0930	***Step 5: Validate Underlying Factors*** *Support/Refute Methodology ● Truck will not Start Example ● Crane Incident Example ● WHY Factor Staircase ● Lost Time Away Injury Example ● Criticality Incident Example ● Broken Back Example ● Root Cause Test*
0930 – 0945	*Break*
0945 – 1100	***Step 5: Validate Underlying Factors (cont'd)*** *Course Evaluation Matrix ● Dump Truck Example ● Extent of Cause Review ● Example 1: Flood Protection Strategy Inadequate ● Example 2: Leak Due to Stress Corrosion Cracking ● Example 3: Rental Car Flat Tire ● Example 4: Waste Not Labeled as Required*
1100 – 1215	***Step 6: Plan Corrective Actions*** *Action Plan ● Change Management ● S.M.A.R.T.E.R. ● Safety Precedence Sequence (Hierarchy of Corrective Action Effectiveness) ● Barriers and Aids Analysis (Pros and Cons) ● Solution Section Tree ● Solution Selection Matrix*
1215 – 1230	*Break*
1230 – 1420	***Step 6: Plan Corrective Actions (cont'd)*** *Contingency Plan ● Lessons to Be Learned Communication Plan ● Institutionalization/Active Coaching Plan ● Effectiveness Review ● Performance Indicator Development*
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: Wednesday, 26th of February 2025

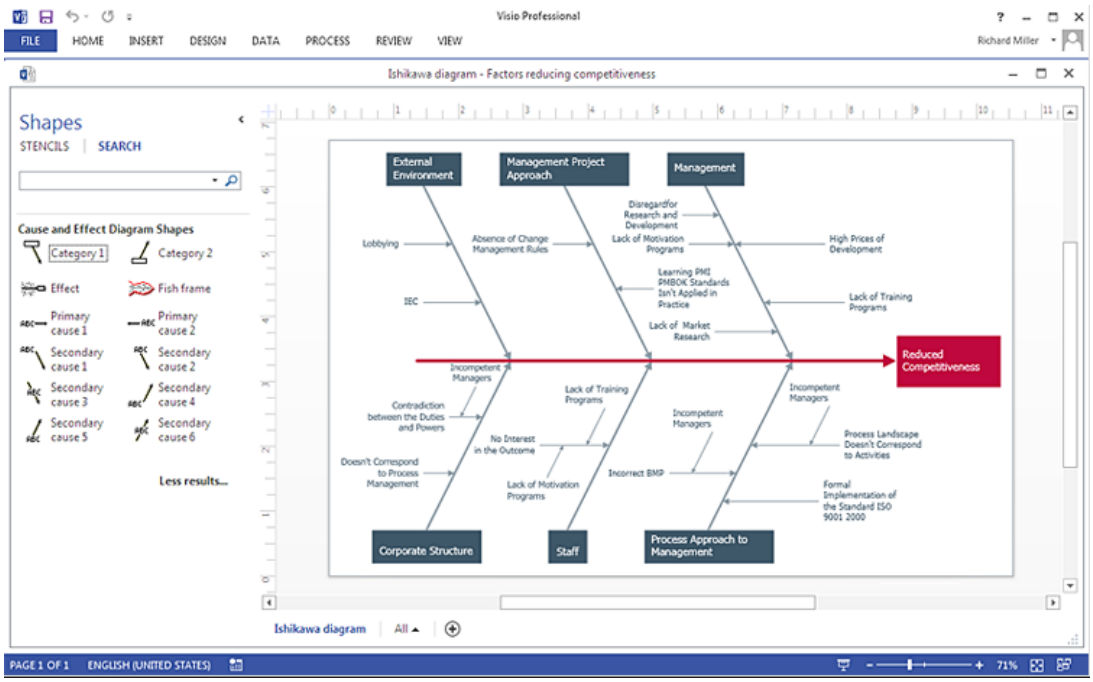
0730 – 0930	***Step 7: Report Writing*** *Preparing to Create Your Report ● Report Template ● Sample Incident Analysis Report Template ● Grade Cards/Scoresheets ● Root Cause Analysis – Sample Organizational Learning Scoresheet*
0930 – 0945	*Break*
0945 – 1100	***Team Management*** *Principles & Techniques of Effective Team Management & Leadership*
1100 – 1230	***Team Management (cont'd)*** *Organization & Management of the Investigation Team, From Start to End*
1230 – 1245	*Break*
1245 – 1420	***Action Plan Follow Up*** *Verification of Action Plan Implementation ● Documentation ● Line Management Accountability*
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 Four*

Day 5: Thursday, 27th of February 2025

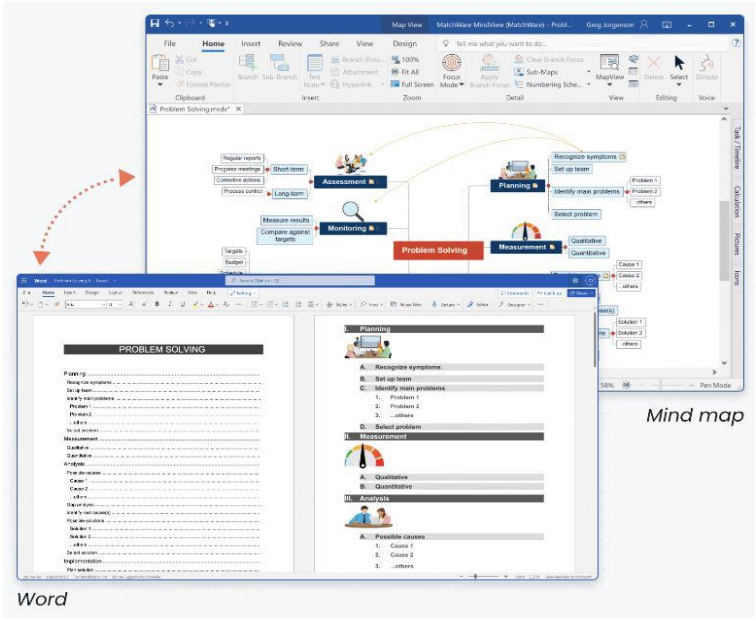
0730 – 0930	***Action Plan Follow Up (cont'd)*** *Key Performance Indicators ● Goal-Setting ● Verification of Action Plan Effectiveness*
0930 – 0945	*Break*
0945 – 1100	***Root Cause Analysis – Other Methodologies*** *Introduction ● American Institute of Chemical Engineers Review ● HSYS ● Checklists ● Assessment of Safety Significant Teams (ASSET) ● Safety Through Organisational Learning (SOL) ● PROACT™*
1100 – 1215	***Practical Exercise on Root Cause Analysis*** *Formation of Investigation Teams ● Setting the Scene – Video and Team Discussion ● Question Session – Gathering of Information ● Team Investigation – Analysis of Information ● Team Discussion – Identification of Risk Control Measures*
1215 – 1230	*Break*
1230 – 1300	***Practical Exercise on Root Cause Analysis (cont'd)*** *Producing a Basic Report, A Team Summary Report ● Recommendations for Change – Creation of Action Plan ● Corrective Actions ● Preventive Actions ● Implementation Stage*
1300 – 1315	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course*
1315 – 1415	***COMPETENCY EXAM***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Simulator (Hands-on Practical Sessions)

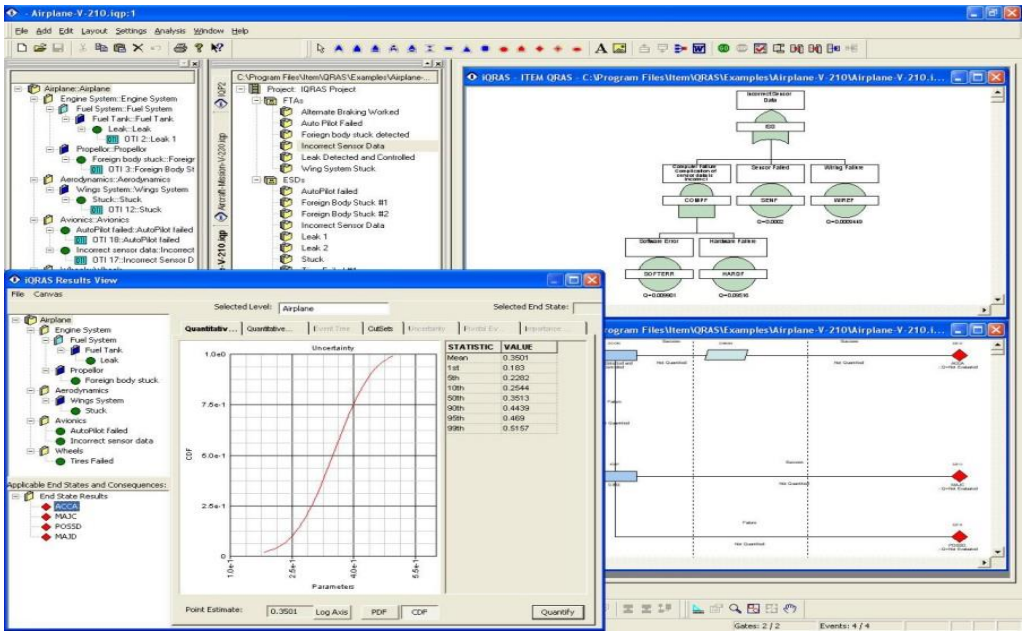
Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using our state-of-the-art simulators “Visio Software”, “Mindview Software” and “QRA”.



Visio Software



Mindview Software



QRA System Simulator

Course Coordinator

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