CURRICULUM VITAE

PERSONNEL DATA

Name: Dr Eduardo Calixto (ECC CEO & Founder / RAMS & Functional Safety Engineer Expert)
Nationality: Brazilian
Born in: Rio de Janeiro
Born date: 30/08/1974
Nationality: German - Germany Citizenship in 03-12-2020 – VZ-Nr 260/ 2020
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EDUCATION

2001 - Industrial Engineer – Federal Fluminense University, RJ, Brasil.
2004 - Master of Science – System Management- Occupational Safety - Federal Fluminense, RJ, Brasil.

2006 - Certified Reliability professional – Reliasoft Corporation US.
2011 - Phd (Doctor of Science) – Energy and Environment - Federal University of Rio de Janeiro, Brasil.
2012 - RAM and LCC Analysis Certified – Innotrans, Germany.
2016 - Functional Safety Expert – Exida/US
2018 - Automotive Functional Safety Professional – SGS/TÜV
2019 – Introduction to Artificial Intelligence with Microsoft: Machine Learning with AZURE.
2020 - Machine Learning with Mathlab: 2. Finding Natural Patterns in Data (Low Dimensional Visualization - k-Means, Clustering - Gaussian Mixture Models - Interpreting the Clusters - Hierarchical Clustering - Project – Clustering) **, 3. Building Classification Models** (Preparing Data - Fitting and Predicting - Evaluating the Classification -Project - Building Classification Models), **4. Classification methods** (Nearest Neighbor Classification, Classification Trees, Naive Bayes Classification, Discriminant Analysis, Support Vector Machines, Multiclass Support Vector Machines, Project - Classification Methods), **5.Improving predictive Model** (Methods for Improving Predictive Models, Cross Validation, Reducing Predictors - Feature Transformation, Reducing Predictors - Feature Selection, Ensemble Learning, Project - Improving Predictive Models, **6.Building Regression Model** (Linear Models - SVMs and Trees, Gaussian Process Regression - Regularized Linear Models, Stepwise Fitting, Project – Regression), **7. Creating Neural Network** (Overview of Neural Networks - Self-Organizing Maps - Feed-Forward Networks)
2020 - Deep Learning Onramp with MATLAB: 1. Introduction, 2. Using Pretrained Networks, 3. Managing Collections of Image Data, 4. Performing Transfer Learning, 5. Conclusion
2020 - Deep Learning Onramp with MATLAB: Classifying Images with Convolutional Networks, Interpreting Network Behavior, Creating Networks, Training Networks, Improving Performance, Project, Performing Regression, Detecting Objects in Images, Classifying Sequence Data with Recurrent Networks, Classifying Categorical Sequences, Generating Sequences of Output.
Unsupervised machine Learning: K Means methods with Python.
Supervised Machine Learning: Tree Based methods with Python.
Supervised Machine Learning: Logistic regression and Naive methods with Python
Introduction to Neural Network and Deep Learning with Python.
Master Data Science in R

LANGUAGES

English: Fluent (IELT Band 6)
German: B1 level Certificate. B2 incomplete
Spanish: Advanced
Portuguese: Mother tongue

WORK EXPERIENCE:

ECC Project: Vom 01-01-2021 to current moment	
RAMS MANAGER	**RB Rail Baltica**

Project description: To manage the RAMS Engineering subject concerning the Infrastructures, Energy, Communication and Rolling Stock System during the Concept and Design Phase implemented in Lithuania, Latvia and Estonia including the system interfaces in Poland.

Activities:

- To lead the RAMS team and support the Safety Engineers and RAM Engineer;
- To prepare the RAMS guidelines based on EN 50126, EN 50128 and EN 50129;
- To manage the RAMS requirement throughout the concept and design phase;
- To manage the interface with NoBo, AsBo, ISA and NSA regarding safety;
- To manage RAMS consultant contract;
- To review technical and procurement document, concerning the RAMS aspects;
- To implement the RAMS culture in RB Baltica;
- To provide internal training concerning RAMS;
- To perform and review Reliability Engineering analysis methods such as LDA, RAM Analysis (RBD Model and Monte Carlo Simulation), SFMEA, DFMEA, PFMEA, FMEA, HRA, .
- To perform and review Safety Risk analysis methods such as PHA, FHA, FTA, ETA, FMEA.
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ECC Project: Vom 01-10-2020 to 19-12-2020	
FMEA AND RELIABILITY DATABASE	**ECC Produkt**

Project description: To develop the FMEA and reliability database for Railway Industry.

Aufgaben:

- To prepare the FMEA files review and format;
- To upload the FMEA files in the ECC virtual class;
- To prepare the Reliability and Maintainability files review and format;

- To upload the Reliability and Maintainability files in the ECC virtual class;

ECC Project: From 27-06-2020 - 1-10-2020	
FMEA AND RCM DATABASE	**ECC product**

Project description: To develop the FMEA and RCM database for Oil and Gas Industry.

Activities:

- To prepare the FMEA files review and format;
- To upload the FMEA files in the ECC virtual class;
- To prepare the RCM files review and format;
- To upload the RCM files in the ECC virtual class;

ECC Project: 01-03-2020 – 30-06-2020	
ONLINE TRAINING – ARTIFICIAL INTELLIGENCE FOR MAINTENANCE 4.0	**ECC online training product**

Project description: To develop the online self-paced training "Artificial Intelligence for Maintenance 4.0 based on developed cases in MATLAB. To release and publish the Book Artificial intelligence for Maintenance 4.0 by Amazon.

Activities:

- To get MATLAB certification in Machine Learning and Deep Learning;
- To prepare different Machine Leaning and Deep learning cases in the matlab;
- To write the book Artificial Intelligence chapters;
- To record the online training Artificial intelligence for Maintenance 4.0 videos.
- To load the online training in the ECC Virtual class.
- To publish the Book Artificial Intelligence for Maintenance 4.0 in Amazon.
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ECC Project: 01-01-2020 – 01-03-2020	
RELIABILITY AND MAINTAINABILITY DATABASE FOR OIL AND GAS INDUSTRY	**ECC product**

Project description: To develop the reliability and maintainability database for Oil and Gas industry Onshore and offshore

Activities:

- To define equipment and component list;
- To predict the Weibull PDF parameters for equipment and components failures;
- To predict the Normal PDF parameters for equipment and components repair/replace time;
- To upload the Reliability and maintainability database report in the ECC virtual class

ECC Project: 01-08-2019 – 01-12-2019 (Partner)	
PROGNOSTIC HEALTH MANAGEMENT	**Enkelt (UK)/ Ridgetop (Belgium)**

Project description: To integrate the Adaptive Prognost Heath Management Softare Solution to the Integrity PRO solution:

Activities:

- To test the ARULE Software;
- To define the PHM specification for the Integrity PRO Software;
- To implement, verify and validate the ARULE software into Integrity PRO software.

ECC Project: 01-08-2019 – 01-12-2019 (Partner)	
RELIABILITY 4.0	**Enkelt (UK)/ ECC (Belgium)**

Project description: To develop the Reliability and Reliability Growth automatic prediction and graphs plots integrated to the Asset Management Solution Integrity PRO

Activities:

- To develop the reliability prediction and Graphs plots;
- To develop the reliability growth prediction and Graphs plots
- To develop the reliability and reliability growth prediction and Graphs configuration in the software Integrity PRO
- To implement, verify and validate the Reliability 4.0 solution.

ECC Project: Since 01-09-2016 (Partner)	
ASSET MANAGEMENT EXPERT	**Enkelt (UK)**

Project description: To support the development of Integrity PRO Asset management solution as well as implement Asset Management program throughout the railway, oil and gas, nuclear, automotive, aerospace and military industry's assets concerning different life cycle phases such as concept, design, manufacturing, commissioning and operation (warranty demonstration and validation). Responsibilities included:

Activities:

- Marketing the Asset management capabilities with external clients;
- To develop marketing within Germany and across the world;
- Technical Authority for Asset Management and RAMS;
- Preparation of marketing material and presentations for Business Development;

Projects:

- Integrity PRO reliability index for Oil and Gas. (Tullow, Seawater)
- Integrity PRO for railway.
- Asset integrity Training in Dubai

Technical environment:

- Software: Integrity PRO SaaS

01-07-2018 – 31-07-2019 (Freelancer)	
RAMS ENGINEER EXPERT	**Hünnemeyer Engineering Consulting for Stadler (Switzerland)**

Project description: The SBB Flirt Train system has the main objective to high performance achievement. Therefore, different reliability and ILS analysis were implemented during the design phase for Bogie, Pneumatic, Fire System, Information System.

Activities:

- RAM Analysis (RBD and FTA).
- FMEA
- Maintainability Analysis

Technical environment:

- Software: Item Toolkit

ECC Project: 14-01-2019 – 18-02-2019 (Consultant Freelancer)	
RAMS ENGINEER EXPERT	**ZQRE (China)**

Project description: The RAMS program review and implementation based on EN 50126 training for ZQRE was developed to enable the application of the best practices of reliability engineering and use of their own databased to predict their products reliability performance. The software XFMEA, Weibull++ and Blocksim++ were also applied in real cases during the training.

Training Module:

- RAMS Program concepts (EN 50126)
- DFMEA, PFMEA, FMEA
- Lifetime Data analysis
- RAM Analysis

Technical environment:

- Software: XFMEA, Weibull++ and Blocksim++

ECC Project: 01-11-2018 – 08-02-2019 (Consulting Service)	
RAMS ENGINEER EXPERT	**AMST (Austria)**

Project description: The Human Training and Research Centrifuge (HTC) is applied to simulate and training fight pilots. The scope of the project at first stage is to review the RBD, FTA, FMECA, RCM and Reliability prediction, propose and recommend improvement. The scope of the project in the second stage is to Implement the RAMS program for the HTC and other type of flight simulators and product consider all elements of RAM program such as RAMS plan, RAMS organizational structure, RAMS Process, RAM information flow throughout process, Reliability engineering methods procedures (RBD, FTA, RAM analysis,

FMECA, PHA, SIL analysis). The Human Training and Research Centrifuge (HTC) flight simulater includer the following: Drive motor, gear box, brakes, Control System, Control Room, Safety Instrument System, PLC´s, Wires, Software, Cables, Circuit Brakes, Display screen, HTC Structure.

Activities:

- RAM Analysis (RBD and FTA).
- FMECA
- PHA (ISO 12100)
- **Functional and SIL Analysis (ISO 13849 and IEC 62061)**

Technical environment:

- Software: Item Toolkit and Blocksim

01-12-2017 – 31-03-2018 (4 months - Employee)	
RAMS MANAGER	**Ansaldo (Germany - Munich)**

Project description: The Serobe Signaling level 2 project related to RAMS activities to the ETCS systems provided for the Streckenertüchtigung Rostock - Berlin Baseline 3. The project encompasses the Balises, Radio Computer Based Interlocking, Lineside Unit, Radio Block Center, GSM-R.

Activities:

- Approves the RAM Analysis, Lifetime data analysis, Reliability growth analysis, FMEA and RCM as well as verification, validation and certification.
- Proceed the RAM and Safety plan.
- Assess the ERTMS RAMS requirements during BID phase.
- Review and approve all RAMS analysis.

Technical environment:

- Softwares: Doors, Enterprise Architecture, FTA (Isograph), Blocksim++ , Weilbul ++

ECC Project: 01-11-2017 to 01-12-2017 and 01-05-2017 – 28-02-2018 (Consultant Freelancer)	
RAMS ENGINEER EXPERT	**Molinari (Austria)**

Project description: The APU system for locomotives of the India national Railway Company has the main objective to increase the locomotive energy consumption efficiency, reduce energy consumption cost and increase the locomotive availability.

Activities:

- RAM Analysis, Lifetime data analysis, DFMEA; PFEMA, FMEA, RCM, HRA, ***PHA, SHA,*** FRACAS of systems such as: Diesel Engine, Diesel Engine cooler, Magnetic Clutch, Cooling Unit (Diesel Engine), Elastic Coupling, Coupling, Alternator, Compressor , Colling Unit (compressor), Electrical Cabinet, DC Power Supply, Wiring, Mounting Frame, Intermediate Tank Fuel, Transfer Fuel Pump, Canopy, Generating set elastically mounting, Generator (AC 200V/ 250 Hz). (EN 50126)

Technical environment:

- Softwares: Lambda Prediction, Blocksim++ , Weilbul ++ (Reliasoft)

ECC Project: 01-09-2015 – 31-05-2016 (8 months - Contractor)	
FUNCTIONAL SAFETY ENGINEER EXPERT	**Philotech/ Airbus (Germany - Ulm)**

Project description: To provide safety and risk assessment such as FMEA, FTA, Functional Hazard analysis, and Safety Requirement definition of antenna radar systems and electronics components such as transmitter and waveguide for Airbus Aerospace and Defence.

Activities:

- Functional Hazard analysis.
- FMECA/FMEDA
- FTA, RAM, LDA

Technical environment:

- Softwares: Doors, Enterprise Architecture, FTA (Isograph), Apmoptimizer(BQR)

ECC Project: 01-04-2015 – 01-05-2016 (1 Month - Freelancer)	
RAMS ENGINEER EXPERT	**Bombardier (UK)**

Project description: The Depot Train facility for trains has several utilities such as Telecommunication and Fire System that the main objective was to build the RBD to predict the systems operational availability and reliability.

Activities:

- Reliability Block Diagram for Communication System and Fire System.

Technical environment:

- Softwares: ApmOptmizer BQR

01-10-2013 – 31-04-2015 (1 year and six month - Employee)	
PRINCIPAL RAM ENGINEER / MANAGER DEPUTY (STAFF)	**Genesis Oil and Gas Consultant (UK- London)**

Project description: To carry out different types of reliability engineering analysis, such as Lifetime data analysis, RAM analysis, Reliability Growth analysis, FMEA, RCM, RBI, Human reliability analysis, preliminary hazard analysis for different client assets (Onshore and Offshore) in Oil and gas industry.

Activities:

- Manager´s Deputy support, reliability engineering analysis and risk assessment.
- Samsung Heavy Industries Co. Ltd, Ichthys ESDV Project , Australia, SPAH-R Human Reliability Analysis for Additional Dynamic Simulation Study
- Xcite Energy Resources, Subsea and Platform project, UK, Human Reliability Analysis: The influence of human factor in Plant performance.
- Xcite Energy Resources, Subsea and Platform project, UK, Drill Utilities equipment FMEA.
- Chevron/Technip, Subsea Asset Management and operational assurance, Indonesia. Subsea equipment such as flexible line, flow line, PLEM, Umbilical, jumpers FMECA, RCM, RBI, RAM analysis, ILS, HRA and Asset Integrity Management using MAROS, Blocksim, apmOptmizer and Active Bow Tie 1.5.
- ADCO Company, Decoupling performance analysis phase 2,UAE, compressors Lifetime Data analysis using Weibull 9.0.
- ADCO Company, Decoupling performance analysis phase 1,UAE, compressors Lifetime Data analysis and reliability growth analysis using Weibull 9.0 and RGA 9.0.
- ADCO Company, Aldab'iya Gas Production System Decoupling RAM analysis,UAE, RAM analysis using MAROS and Blocksim 9.0.
- ADCO Company, HAIL Subsea and Topsite system RAM analysis,UAE, RAM analysis using MAROS and Blocksim 9.0.
- ***SHELL, RABI facility PFMEA, Gabon, FMEA for different equipment such as Pumps, electric motors, Valve and pipe.***
- ***SHELL, RABI facility PHA, Gabon, PHA for compressor vent system***
- Chevron, Old Boiler House RAM analysis, Kazakhstan, Lifetime data analysis, reliability growth analysis and RAM analysis using Weibull 9.0, RGA 9.0, Blocksim 9.0

and MAROS.

- ***Chevron Indonesia, Subsea asset Management assurance (FMEA, RCM, RAM, RBI, Bow Tie, HRA, ILS, AIM) using software Blocksim, ApmOptimizer,Bow tie***

Technical environment:

- Softwares: RBD (BQR), Apmoptimizer(BQR), Weibull ++(Reliasoft), Blocksim ++(Reliasoft), RGA++ (Reliasoft), MAROS(DNV)

01-08-2012 – 31-09-2013 (1 year and 3 months -Employee)

RAM ENGINEER SPECIALIST (STAFF)	**Bombardier (Germany – Görlitz)**

Project description: To carry out different types of reliability engineering analysis, such as Lifetime data analysis, RAM analysis, Reliability Growth analysis, FMEA, RCM, for different train systems for bombardier projects such as Pantograph, Brake, Bogie, Doors, Passenger Information, Passenger Counting System, European Vehicle Control (EVC), Automatic Train protection (ATP), TCMS, Brake Control, Fire Detection System, Radio System, HVAC, Clutch, Windscreen.

Activities:

- Reliability engineering analysis as well as reliability requirement definition, validation and verification.

Technical environment:

- Softwares: Weibull ++(Reliasoft), Blocksim ++(Reliasoft), RGA++ (Reliasoft).

01-08-2011 – 31-07-2012 (9 months - Contractor)

RELIABILITY ENGINEER CONSULTANT (CONTRACTOR)	**Reliasoft for Kuwait Oil Company (Kuwait)**

Project description: To support the implementation of Reliability engineering program at Kuwait Oil Company by carrying out different types of reliability engineering analysis, such as Lifetime data analysis, RAM analysis, FMEA and RCM, for different oil and gas assets.

Activities:

- FMEA and RCM implementation and training: Compressor and pumps.
- Lifetime data Analysis: Gathering System BS-150.
- RAM Analysis: Gathering System BS-150

Technical environment:

- Softwares: Weibull ++(Reliasoft), Blocksim ++(Reliasoft), RGA++ (Reliasoft), RCM++(Reliasoft).

01-10-2003 – 31-09-2011 (8 year - Employee)

PRODUCTION ENGINEER (STAFF)	Petrobras (Brazil – Rio de Janeiro)

Project description: To carry out different types of reliability engineering analysis, such as Lifetime data analysis, RAM analysis, Reliability Growth analysis, FMEA, RCM, Human reliability analysis, preliminary hazard analysis for different client assets (Onshore and Offshore) in Oil and gas industry.

Activities:

- **RISK MANAGEMENT:** Risk Management and Audit methodology implementation for all twelve Brazilian Refinery.
- **HAZOP COORDINATION:** Natural Gas Treatment Unit (Cacimbas – ES), Reverse Osmose Plant (REPLAN – SP), Nafta Hydrotreating Unit (REVAP – SP), Petrochemical Unit (Riopolimeros), Hydrogen Generation Unit, UFCC (U-103 / U-104), Water treatment Plant (UN-RNCE), Atmospheric Distillation Unit (U-2100- REPAR), DEA Unit (U- 22323), Nafta Hydrotreating Unit (U-306-REGAP), Atmospheric Distillation Unit (U-2110 - REMAM),UFCC (U- 2221 - REMAN), Turboexpansor - UFCC (U-220 – REPLAN), Hydrogen Generation Unit (REPAR),Natural Gas treatment Plant (Mexilhão), Hydrogen Generation Unit - UGH (U-38-RLAM),
- **PHA COORDINATION:** SEMI-BR P-55 (UN-RIO/ ATP-RO), Hydrogen Generation Unit (REGAP),CENPES II Facilities Plant, Oil treatment and Process Plant (5P).
- **FMEA COORDINATION:** UFCC Turboexpansor (U-220 - REPLAN), Electric Generation Facility, Cooling Water Facility.
- **RISK QUANTITATIVE ANALYSIS:**FTA, ETA, BAYES NETWORK HUMAN RELIABILITY, BAYES METHODOLOGY: Urubamba Drill project, Caliph Drill Project.
- **QUANTITATIVE RISK ANALYSIS (CONSEQUENCE, VULNERABILITY AND EFFECT Software ALOHA EPA):** Water Tank Quantitative Risk Analysis, REGAP OIL Tank Quantitative Risk Analysis, REVAP GLP Pipeline Quantitative Risk Analysis.
- Refineries Plants and equipment Lifetime data analysis, reliability growth and RAM analysis , Brazil, using Weibul 9.0, RGA, Blocksim 9.0 and MAROS.
- Refineries Integrated Model analysis , Brazil, using MAROS and TARO.
- Refineries Plants and equipment FMEA, HAZOP, PHA, SIL, QRA, Brazil, using E&P

office,

- RAM Analysis: CENPES II Facilities, Nafta Hydrotreating Plant (U-33 – RLAM), Nafta Hydrotreating Plant (U-35 - RLAM),
- RAM Analysis: Atmospheric Distillation Plant (U-32 - RLAM), Hydrogen Generation Plant(U-34 - RLAM), Hydrogen
- RAM Analysis: Generation Unit (U-38 - RLAM), Hydrotreating Plant (U-2313 – RECAP), Hydrotreating Unit (U-310 – REGAP), DEA Plant (U-311 – REGAP), Sour Water Plant (U-613 – REGAP), Hydrogen Generation Plant (U-409 –REGAP), PROPYLENE Plant (REGAP), Atmospheric Distillation Plant (U-201 - REGAP), Vacuum Distillation Plant (U-202- REGAP), PSA SYSTEM (U-409 –REGAP), Boiler Pumps Analysis (REGAP), Diesel Hydrotreating Plant (U- 2313 – REMAN), Nafta Hydrotreating Plant (U-2312 – REMAN),
- RAM Analysis: Reforming Catalytic Plant (U-2222 - REMAN), Nafta Pretreatment Plant (U-2120-REMAN), CTB Plant (U-2221-REMAN), DEA Plant (U-2323-REMAN), Sour Water (U-5126-REMAN), Atmospheric and Vacuum Distillation Plant (U-2110 - REMAN), Atmospheric Distillation Plant (U-2111 - REMAN),
- RAM Analysis: Catalytic Cracking Plant (U-2121 - REMAN), Acid Gas Treat Plant (U-3412-REMAN),
- RAM Analysis: Diesel Hydrotreating Plant (U-5200 – REDUC), Hydrogen Generation Plant(U-5600 - REDUC), DEA Plant (U-5450 – REDUC), Sulphur Recovery UNIT Plant (U-55000 – REDUC), Sour Water Plant (U-5400-REDUC),Drilling Facility SC-86.
- RAM + L ANALYSIS (RELIABILITY, AVAILABILITY, MAINTAINABILITY AND LOGISTIC): REGAP Refinery RAM+L (U-210, U-211, U-310, U-409, U-613, U-311 and tanks), REMAN Refinery RAM+L (U-2312, U-2313, U-2222, U-2120, U-2221, U-2323, U-5126, U-2110,U-2111, U-2121,U-3412 and tanks).
- RELIABILITY GROWTH ANALYSIS: Heat exchanger Reliability Grown Analysis (REGAP/RLAM/REDUC), Turbine Reliability Grown Analysis(REPAR). Software - RGA 7 reliasoft.
- HUMAN RELIABILITY: Bayesian Network – Lybia Drill , Urubama Drill, Bayesian Network, THERP, OAT, HFTA, SLIM, SPAH-R, STARH, HEART – Turbine start up task (REPAR).

Technical environment:

- Softwares: Weibull ++(Reliasoft), Blocksim ++(Reliasoft), RGA++ (Reliasoft), RCM++(Reliasoft), MAROS (DNV), TARO (DNV), E&P Office (FTA, ETA Bayes network, Bayes methodology.), Marplot (EPA-US), Aloha (EPA-US)
- Subject: RAMS Engineer

01-03-2001 – 31-08-2003 (2 years and 5 months - Employee)

PRODUCTION ENGINEER (STAFF)	Vale (Brazil - Vitoria)

Project description: To control pelletizing plant performance and implement the Health Safety and Occupational System for seven pelletizing plants.

Activities:

- Pelletizing Hazard identification and risk assessment.
- Safety Audit, Daily Safety Dialog, Safety incident and accident analysis and investigation, Unsafe conditions management, Prepare and deliver Safety training for workforce, prepare safety procedures, Emergency response simulation, workplace ergonomic assesmsent implementation.
- Plant performance control;
- Root Cause Analysis.
- ISO 9001 and Iso 14001 internal audit

Technical environment:

- Subject: Safety and industrial Engineer

PUBLICATIONS

BOOKS

- ***"Gas and Oil Reliability Engineering: Modelling and Simulation***. Elsevier ISBN: 9780123919144 – (Release in September2012). http://store.elsevier.com/Gas-and-Oil-Reliability-Engineering/Eduardo-Calixto/isbn-9780123919144" Best Seller in: http://www.alibris.co.uk/search/books/subject/Gas-wellsand http://www.amazon.ca/Best-Sellers-Kindle-Store-Petroleum-Engineering/zgbs/digital-text/5792244011
- ***"Gas and Oil Reliability Engineering: Modeling and Simulation. Second edition***, Elsevier ISBN: 9780123919144 – (Release in 26 May2016). http://store.elsevier.com/Gas-and-Oil-Reliability-Engineering/Eduardo-Calixto/isbn-9780128054277/.
- ***"Safety Science: Methods to Prevent Incident and worker Health Damage at Workplace.*** Bentham Science: (Release in December 2014). http://www.benthamscience.com/ebooks/forthcomingtitles.htm
- ***RAMS and LCC engineering applied to railway industry: Analysis, Modeling and Optimization.*** 18-04-2018.Amazon. ISBN-13: 978-1986524704. https://www.amazon.co.uk/RAMS-LCC-Engineering-Railway-Industry-ebook/dp/B07CHLRGWC/ref=sr_1_2?ie=UTF8&qid=1528369520&sr=8-

2&keywords=eduardo+calixto

- ***Artificial Intelligence for Maintenance 4.***0

  https://www.amazon.de/Artificil-Intelligence-Maintenance-Eduardo-Calixto/dp/B08DGCCLTW/ref=sr_1_2?__mk_de_DE=%C3%85M%C3%85%C5%BD%C3%95%C3%91&dchild=1&keywords=Eduardo+Calixto&qid=1596006826&sr=8-2

PAPER

- ***"The implantation of safety and occupational health system: a study case in our industry"*** working on safety 2006 – Netherlands.
- ***"The Project Cenpes II ram analyse ".*** Portugal 2006 – Estoril, 3° international reliability symposium – Brazil - 2005, the international Asia reliability symposium – Singapore -2005, Esrel 2006, Rio oil & gas 2006.
- ***"The enhancement availability methodology: a refinery study case".***esrel2006 – Estoril, 4° international reliability Simposium – sic 2006 - Brazil -2006, Rio oil & gas – 2006.
- ***"Sensitivity analysis in critical equipments: the distillation plant study case in Brazilian oil and gas industry"***. Norway 2007 – Stavanger, 5° international reliability Simposium – Brazil -2007.
- ***"Dynamic equipment life cycle analysis".*** 6° international reliability Simposium – Brazil – SIC 2008.
- ***"The integrated preliminary hazard analysis methodology regarding the environment, safety and social issues. The platform risk analysis study"*** . Esrel 2007 – Stavanger, wcogi 2007 –- Gyeongju – Korea, icrms 2007 – Beijing –China.
- ***"The safety integrity level as hazop risk consistence. The Brazilian risk analysis study case".*** Norway2007, Stavanger, icrms 2007 – Beijing –China
- ***The non-linear optimization methodology model: the refinery plant availability optimization study case."*** Norway 2007 – Stavanger, icrms 2007 – Beijing –China
- ***"Risk management in project".*** Rio oil & gas 2006, enegep 2006.
- ***"Environmental reliability, as a requirement for defining environmental impact Limits in critical areas."*** Spain 2008 – Valencia, wash - create.
- ***"Hybrid risk analysis: drilling case study risk analysis "***. 7° international reliability symposium – Brazil –SIC 2009.
- **"Reliability value, improving practice case study: stock level impact in turbine Availability."** 7° international reliability symposium – Brazil –size 2009.
- ***"The regional emergency plan requirement: application of the best practices to the***

Brazilian case". Safety Science. Safety 1811, no. Of pages 9, model 5g, 13 July 2009 disk used. Journal homepage: www.elsevier.com/locate/ssci.

- ***"Using a network methodology to define emergency response team location: the Brazilian refinery case study".*** International journal of emergency management volume 6, number 1/2009 pages: 85 – 98.
- ***"RAM+ L analysis: the Brazilian refinery case study".*** Esrel 2010 – Rhodes, Grécia.
- ***"The value improvement, reliability engineer practice methodology: case study in a Brazilian refinery plant".*** ARS 2010 – Berlin, Germany.
- ***"The optimum replacement time considering reliability growth, life cycle and operational costs."*** ARS 2011 – Amsterdam, Netherlands.
- **"RAMS Analysis methodology: the safety process effect on system availability".** ARS 2012 – Warsaw, Poland
- ***"Inspection based on reliability: defining the time of inspection periods based on reliability growth analysis".*** Euromaintenance 2012, Belgrade.
- ***"Inspection based on reliability: defining the time of inspection periods based on power law model".*** PSAM & Esrel 2012, Finland - Helsinki.
- ***"Process Risk Management based on the Brazilian national quality award Methodology".*** Working on safety 2012- Poland – Sopot.
- ***"Risk assessment methodology to support shutdown plant decision".*** Working on safety 2012- Poland –Sopot.
- ***"RAMS and Life Cycle Cost analysis: How Reliability Engineering tools can be applied to improve Asset Management on train life cycle"*** – ARS 2013 - Berlin.
- ***"RAMS and Life Cycle Cost analysis: How Reliability Engineering tools can be applied to improve Asset Management on train life cycle"*** – 44 th Esreda seminar – Porto, ESREL 2013. Amsterdam.
- ***"Integrated RAMS Analysis Methodology The railway case study."*** ESREL 2013. Amsterdam
- ***"Risk Process Management Evaluation Methodology."*** II Safety Function Specialist Seminar UDT, Poland - Warsaw
- ***"Comparing SLIM, SPAR-H and Bayesian Network Methodologies".*** Calixto E, Brito Gilson Alves Lima2, Firmino Paulo Renato Alves 3.. Open Journal of Safety Science and Technology, 2013, 3, 31-41 doi:10.4236/ojsst.2013.32004 Published Online June 2013 (http://www.scirp.org/journal/ojsst).
- ***"Reliability Engineering Applied to decommissioning phase. "***III Safety Function Specialist Seminar UDT, Poland – Warsaw.
- **"The biggest 12 mistakes in Reliability Engineering."** How to avoid them. SIC 2014 – Brazil – Sao Paulo.
- ***"Reliability Engineering Applied to decommissioning phase: Comparing different methods to predict future failures."*** ESREL 2014, Wroclaw – Poland.

- ***"Reliability Engineering Applied to Oil and Gas industry."*** IRMEC 2014, Jakarta – Indonesia.
- ***"Asset Management based on optimization solutions integrated with the database. "***Comment optimiser vos coûts de maintenance dans le secteur de l'oil&gas, de l'énergie, des transports et du traitement des déchets. ENNOVIA, Paris - France 2015.
- ***"Asset Integrity Management: Integrated Risk Management, Human Factor, Reliability and Maintenance methodology applied to offshore case."*** ESREL 2015. Zurich - Switzerland
- ***"Integrated Logistic Support: How to integrate and optimize RAM, preventive maintenance, inspection and life cycle cost results."*** ESREL 2015. Zurich - Switzerland
- ***"The role of proactive approach to maintenance in Oil and Gas industry. Risk engineering Days."***Grupa PZU.Poland /Sopot.17-18 September 2015.
- ***"Asset Management based on Operational Availability And Life Cycle Cost Optimization Achievement:"*** The Offshore Process Case Study. Euromaintenance 2016 - Greece Atennas.
- ***"Asset Management Program implementation as the basis for sustaining asset high performance."*** The 2nd Indonesia Conference and Exibition. Oil and Gas Asset Integrity. Maintenance and Inspection Management. Jakarta – Indonesia 2017
- ***"Good Practices of RCM and RBI applied to AIM."*** The 2nd Indonesia Conference and Exibition. Oil and Gas Asset Integrity. Maintenance and Inspection Management. Jakarta – Indonesia 2017
- ***"Asset Integrity Management from Concepts to Operation phase".*** ARDC 2018, Denmark – Copenhagen.
- ***"RAMS Program Implementation for Railways Industry: Lessons Learned with Reliability Engineering Applications throughout the Railways Assets Life Cycle Case"*** ARDC 2018, Copenhagen - Denmark.
- ***"Asset Integrity Management throughout the Asset Lifecycle"***. Euromaintenance 2018, Antwerp – Belgium.
- ***RAMS Program Implementation for Railways Industry: Lessons Learned with Reliability Engineering Applications throughout the Railways Assets Life Cycle Case ".*** ARDC 2018, Shanghai, China.
- **"RAMS Program implementation for Electrics and Electronics in Railways Industry"**. The Electric and Electronic Engineering Conference 2018. Guangzhou -China 2018.
- **Human Reliability analysis applied to reliability and safety analysis**. ARDC 2019, Berlin, Germany.
- **"Reliability 4.0: The oil and Gas industry case study"**. Indonesia Maintenance 4.0 conference, Jakarta, Indonesia 2019.
- **"The reliability 4.0 Revolution: The oil and Gas industry case study"**. AIMP, National Maintenance Congress of Portugal, Braga, Portugal.2019
- **"The reliability 4.0 and FRACAS 4.0 as part of Asset Management solution for Water**

Facilities. Asset Performance 4.0 Conference (BEMAS), Belgium.2020

- **"The reliability 4.0 as part of Intelligent Asset Management.** Brazil National Maintenance Congress (ABRAMAN), Brazil.2020
- **"The Adaptative Prognostic Health management as part of Intelligent asset Management:**P, Brazil National Maintenance Congress (ABRAMAN), Brazil.2020
- **Artificial Intelligence Unsupervised Machine Learning applied for Maintenance plan optimization. The K-Means Case study applied for a pump bearing vibration RUL.** Brazil National Maintenance Congress (ABRAMAN), Brazil.2020
- **"The reliability 4.0 and PHM as part of Intelligent Asset Management.** Petrobras Reliability Seminar (Petrobras Internal Congress), Brazil.2020
- **Artificial Intelligence Unsupervised Machine Learning applied for Maintenance plan optimization, OMAINTEC, OMAN.2020**
- **"The Adaptative Prognostic Health management as part of Intelligent asset Management.** Maintenance Workshop (APMI), Portugal.2020

AWARDS

- "The Marquis Who´s who in the world 2012-2014 - the prize is awarded by in The Marquis Who´s who in the world".
- "The life achievement – Category Consultant - the prize is awarded by in The Marquis Who´s who in the world".
- Best Presentation at ARDC China 2018.

Appendix A: Dr. Eduardo RAM Activities for Railway Industry

Railway Industry				
2012	Bombardier – Germany	RAM Analysis Weibull Analysis FMEA RCM Reliability Growth	Brake System	HBM - Blocksim ++ HBM - Weibull ++ HBM - RGA ++
2012	Bombardier – Germany	RAM Analysis FMEA RCM	Bogie System	HBM - Blocksim ++ HBM - Weibull ++
2013	Bombardier – Germany	RAM Analysis FTA Analysis Weibull Analysis FMEA RCM Reliability Growth	Door System	HBM - Blocksim ++ HBM - Weibull ++ HBM - RGA ++
2013	Bombardier – Germany	RAM Analysis Weibull Analysis FMEA RCM	Pantograph System	HBM - Blocksim ++ HBM - Weibull ++
2013	Bombardier – Germany	RAM Analysis FMEA RCM	Propulsion System	HBM - Blocksim ++
2013	Bombardier – Germany	RAM Analysis Weibull Analysis FMEA RCM	TCMS System	HBM - Blocksim ++
2013	Bombardier – Germany	RAM Analysis FTA Analysis FMEA RCM	Fire Protection System	HBM - Blocksim ++ Isograph Bench FTA
2013	Bombardier – Germany	RAM Analysis FMEA RCM	Car Body Fitting	HBM - Blocksim ++
2013	Bombardier – Germany	RAM Analysis FMEA RCM	Windshield	HBM - Blocksim ++
2013	Bombardier – Germany	RAM Analysis FMEA RCM	HVAC	HBM - Blocksim ++
2013	Bombardier – Germany	RAM Analysis FTA Analysis Weibull Analysis FMEA RCM	Radio System	HBM - Blocksim ++ Isograph Bench FTA
2013	Bombardier – Germany	RAM Analysis FMEA RCM	Passenger Information System	HBM - Blocksim ++
2013	Bombardier - Germany	RAM Analysis FMEA	Passenger Counting System	HBM - Blocksim ++

		RCM		
2013	Bombardier – Germany	RAM Analysis FMEA RCM	Automatic Train Protection	HBM - Blocksim ++
2013	Bombardier – Germany	RAM Analysis FMEA RCM	SSD -TELOC 1500	HBM - Blocksim ++
2013	Bombardier – Germany	FMEA RCM	Luggage Pack	Excel MS
2013	Bombardier – Germany	FMEA RCM	Traction Cooling Motor	HBM - Blocksim ++
2013	Bombardier – Germany	FMEA RCM	Driver Seat	Excel MS
2013	Bombardier – Germany	FMEA RCM	Toilet Tank	Excel MS
2013	Bombardier – Germany	FMEA RCM	GSR Mask and Spoiler	Excel MS
2013	Bombardier – Germany	FMEA RCM	Toilet Cabin	Excel MS
2013	Bombardier – Germany	FMEA RCM	Exterior Lights	Excel MS
2013	Bombardier – Germany	FMEA RCM	Auxiliary Converter	Excel MS
2015	Bombardier UK	RAM Analysis	Depot Communication System	HBM - Blocksim ++
2016	Molinary Railway – Austria	RAM Analysis	Locomotive Auxiliary Power Unit	HBM - Blocksim ++
2016	Molinary Railway – Austria	RCM Analysis	Locomotive Auxiliary Power Unit	Excel MS
2016	Molinary Railway – Austria	DFMEA	Locomotive Auxiliary Power Unit	Excel MS
2016	Molinary Railway – Austria	PFMEA	Locomotive Auxiliary Power Unit	Excel MS
2016	Molinary Railway – Austria	FMEA	Locomotive Auxiliary Power Unit	Excel MS
2016	Molinary Railway – Austria	HRA	Locomotive Auxiliary Power Unit	Excel MS
2016	Molinary Railway – Austria	FRACAS	Locomotive Auxiliary Power Unit	Excel MS
2018	Stadler Railway	RAM Analysis	Train Doors	Item Tool kit
2018	Stadler Railway	RAM Analysis	Train Brake	Item Tool kit
2019	Stadler Railway	RAM Analysis FMEA	Pneumatic System	Item Tool kit
2019	Stadler Railway	RAM Analysis	Bogie System	Item Tool kit

Appendix B: Dr. Eduardo RAM Activities for Aerospace Industry

Aerospace Industry				
2015	Airbus - Germany	RAM Analysis FTA Analysis	Surveillance Radar System	BQR - ApmOptmizer Isograph – FTA Bench
2015	Airbus - Germany	FMEA	Transmitter	Excel MS
2015	Airbus - Germany	FMEA	Wave Guide	Excel MS
2019	AMST - Austria	RAM Analysis FTA Analysis FMEA	Flight Simulator System	HBM - Blocksim ++ Item Tool kit

Appendix C: Dr. Eduardo RAM Activities for Oil & Gas Industry

Oil and Gas Industry				
Period	**Client**	**Analysis**	**Summary of activities**	**Software**
2004	Petrobras - Brazil	RAM Analysis Weibull Analysis FMEA	CENPES II Facilities	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2005	Petrobras - Brazil	RAM Analysis Weibull Analysis	Nafta Hydrotreating Plant (U-33 – RLAM)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2005	Petrobras - Brazil	RAM Analysis Weibull Analysis	Nafta Hydrotreating Plant (U-35 - RLAM)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2006	Petrobras - Brazil	RAM Analysis Weibull Analysis	Atmospheric Distillation Plant (U-32 - RLAM)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2006	Petrobras - Brazil	RAM Analysis Weibull Analysis	Hydrogen Generation Plant(U-34 - RLAM)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2006	Petrobras - Brazil	RAM Analysis Weibull Analysis	Generation Unit (U-38 - RLAM)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2006	Petrobras - Brazil	RAM Analysis Weibull Analysis	Hydrotreating Plant (U-2313 – RECAP)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2007	Petrobras - Brazil	RAM Analysis Weibull Analysis	, Hydrotreating Unit (U-310 – REGAP)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2007	Petrobras - Brazil	RAM Analysis Weibull Analysis	DEA Plant (U-311 – REGAP)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2007	Petrobras - Brazil	RAM Analysis Weibull Analysis	Sour Water Plant (U-613 – REGAP)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2007	Petrobras - Brazil	RAM Analysis Weibull Analysis	Hydrogen Generation Plant (U-409 –REGAP)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2008	Petrobras - Brazil	RAM Analysis Weibull Analysis	PROPYLENE Plant (REGAP)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2008	Petrobras - Brazil	RAM Analysis Weibull Analysis	Atmospheric Distillation Plant (U-201 - REGAP)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2008	Petrobras - Brazil	RAM Analysis Weibull Analysis	Vacuum Distillation Plant (U-202- REGAP)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2008	Petrobras - Brazil	RAM Analysis Weibull Analysis	PSA SYSTEM (U-409 –REGAP)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++

2008	Petrobras - Brazil	RAM Analysis Weibull Analysis	Boiler Pumps Analysis (REGAP),	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2009	Petrobras - Brazil	RAM Analysis Weibull Analysis	Diesel Hydrotreating Plant (U-2313 – REMAN)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2009	Petrobras - Brazil	RAM Analysis Weibull Analysis	Nafta Hydrotreating Plant (U-2312 – REMAN)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2009	Petrobras - Brazil	RAM Analysis Weibull Analysis	Reforming Catalytic Plant (U-2222 - REMAN)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2009	Petrobras - Brazil	RAM Analysis Weibull Analysis	Nafta Pre-treatment Plant (U-2120-REMAN),	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2009	Petrobras - Brazil	RAM Analysis Weibull Analysis	CTB Plant (U-2221-REMAN)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2009	Petrobras - Brazil	RAM Analysis Weibull Analysis	DEA Plant (U-2323-REMAN)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2009	Petrobras - Brazil	RAM Analysis Weibull Analysis	Sour Water (U-5126-REMAN)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2009	Petrobras - Brazil	RAM Analysis Weibull Analysis	Atmospheric and Vacuum Distillation Plant (U-2110 - REMAN)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2009	Petrobras - Brazil	RAM Analysis Weibull Analysis	Atmospheric Distillation Plant (U-2111 - REMAN)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2009	Petrobras - Brazil	RAM Analysis Weibull Analysis	Catalytic Cracking Plant (U-2121 - REMAN)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2009	Petrobras - Brazil	RAM Analysis Weibull Analysis	Acid Gas Treat Plant (U-3412-REMAN)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2010	Petrobras - Brazil	RAM Analysis Weibull Analysis	Diesel Hydrotreating Plant (U-5200 – REDUC)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2010	Petrobras - Brazil	RAM Analysis Weibull Analysis	Hydrogen Generation Plant(U-5600 - REDUC)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2010	Petrobras - Brazil	RAM Analysis Weibull Analysis	DEA Plant (U-5450 – REDUC)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2010	Petrobras - Brazil	RAM Analysis Weibull Analysis	Sulphur Recovery UNIT Plant (U-55000 – REDUC),	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++

2010	Petrobras - Brazil	RAM Analysis Weibull Analysis	Sour Water Plant (U-5400-REDUC)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2010	Petrobras - Brazil	RAM Analysis Weibull Analysis	Drilling Facility SC-86.	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++
2009	Petrobras - Brazil	RAM + L ANALYSIS (Reliability, Availability, Maintainability And Logistic)	REGAP Refinery RAM+L (U-210, U-211, U-310, U-409, U-613, U-311 and tanks), REMAN Refinery RAM+L (U-2312, U-2313, U-2222, U-2120, U-2221, U-2323, U-5126, U-2110,U-2111, U-2121,U-3412 and tanks).	DNV – MAROS DNV - TARO HBM - Blocksim ++ HBM - Weibull ++
2009	Petrobras - Brazil	Reliability Growth Analysis	Heat exchanger Reliability Growth Analysis (REGAP/RLAM/REDUC),).	HBM - Weibull ++ HBM - RGA++
2009	Petrobras - Brazil	Reliability Growth analysis	Turbine Reliability Growth Analysis (REPAR)	DNV - MAROS HBM - Blocksim ++ HBM - Weibull ++ HBM - RGA++
2010	Petrobras - Brazil	Human Reliability	Bayesian Network – Lybia Drill , Urubama Drill, Bayesian Network,	E&P Risk Software - Petrobras
2010	Petrobras - Brazil	Human Reliability (THERP, OAT, HFTA, SLIM, SPAH-R, STARH, HEART)	Turbine start up task (REPAR).	Excel MS
2011	KOC - Kuwait	RCM Analysis	Compressor System	RCM ++ - HBM
2011	KOC - Kuwait	RAM Analysis Weibull Analysis	Gathering System	HBM - Blocksim ++ HBM - Weibull ++
2011	KOC - Kuwait	Weibull Analysis Cost/benefit Analysis	Production Pumps	HBM - Blocksim ++ HBM - Weibull ++
2015	Samsung Heavy Industries Co. Ltd, Ichthys - Australia	SPAH-R Human Reliability and Risk Analysis for Additional Dynamic Simulation Study	Emergency Shut Down Valve (ESDV)	Bow Tie Active Support Consultant
2015	Xcite Energy Resources - UK	Human Reliability Analysis and RAM analysis	Subsea and Platform	HBM - Blocksim ++

2015	Xcite Energy Resources - UK	FMEA.	Drill Facility	Excel MS
2014	Chevron Indonesia	Subsea Asset Management and operational assurance	Subsea equipment: Flexible line, flow line, PLEM, Umbilical, jumpers	Word MS Excel MS
2014	Chevron Indonesia	FMECA	Subsea equipment: Flexible line, flow line, PLEM, Umbilical, jumpers	Excel MS
2014	Chevron Indonesia	RCM	Subsea equipment: Flexible line, flow line, PLEM, Umbilical, jumpers	Excel MS
2014	Chevron Indonesia	RBI	Subsea equipment: Flexible line, flow line, PLEM, Umbilical, jumpers	Excel MS
2014	Chevron Indonesia	RAM analysis	Subsea equipment: Flexible line, flow line, PLEM, Umbilical, jumpers	HBM - Blocksim ++
2014	Chevron Indonesia	ILS	Subsea equipment: Flexible line, flow line, PLEM, Umbilical, jumpers	apmOptmizer - BQR
2014	Chevron Indonesia	HRA	Subsea equipment: Flexible line, flow line, PLEM, Umbilical, jumpers	Excel MS
2014	Chevron Indonesia	Asset Integrity Management	Subsea equipment: Flexible line, flow line, PLEM, Umbilical, jumpers	Active Bow Tie 1.5.
2014	ADCO Company - UAE	RAM Analysis	Aldab'iya Gas Production System	DNV - MAROS HBM - Blocksim ++
2014	ADCO Company - UAE	RAM Analysis	HAIL Subsea and Topsite system	
2014	SHELL	FMEA	RABI facility	Excel MS
2014	ASE Group, Poland	FMEA/RCM	Process Tank	Excel MS
2014	Chevron – Kazakhstan	RAM analysis,	Old Boiler House	HBM - Weibull ++ HBM - RGA++
2015	ADCO Company - UAE	Weibull Analysis	Compressors performance analysis phase 2	HBM - Weibull ++
2015	ADCO Company - UAE	Reliability Growth Analysis	Compressors performance analysis phase 2	HBM - RGA++

Appendix C: Dr. Eduardo Safety Activities for All Industries

All Industries				
2015-2020	ECC - Germany	Asset integrity	Asset integrity management Software development	Integrity PRO
2019	ECC - Germany for AMST - Austria	FTA Analysis verification	FTA for Flight Simulators System	Item Toolkit
2019	ECC - Germany for AMST - Austria	FMEA verification	FMEA for Flight Simulators System	Item Toolkit
2019	ECC - Germany for AMST - Austria	Functional Safety Analysis and SIL Analysis verification	Functional Safety Analysis and SIL Analysis verification for Flight Simulators System	Excel MS
2018	ECC - Germany for Molinari - Austria	System Hazard Analysis	System Hazard Analysis for Locomotive Auxiliary Power unit	Excel MS
2015	Genesis Consultant Chevron Indonesia	Asset integrity	Asset integrity for subsea systems critical safty elements such as Flexible line, flow line, PLEM, Umbilical, jumpers	Excel MS Bow Tie Software
2015	Genesis Consultant Chevron Indonesia	Bow Tie Analysis	Asset integrity for subsea systems critical safty elements such as Flexible line, flow line, PLEM, Umbilical, jumpers	Bow Tie Software
2015	Genesis Consultant for Chevron Indonesia	Human Reliability Analysis (HRA)	HRA for subsea systems critical safty elements such as Flexible line, flow line, PLEM, Umbilical, jumpers	Excel MS
2015	Genesis Consultant for Samsung Heavy Industries Co. Ltd, Ichthys – Australia	HUMAN RELIABILITY	Emergency Shut Down Valve (ESDV) Bow Tie Active and SPAH-R Human Reliability and Risk Analysis for Additional Dynamic Simulation Study ().	Excel MS
2014	Genesis Consultant for Shell Gabon	FMEA	FMEA for Gabon Plant including Pumps, compressors and pipeline.	Excel MS
2014	Genesis	PHA	PHA for Gabon Plant	Excel MS

	Consultant for Shell Gabon		including Pumps, compressors and pipeline.	
2011	Petrobras	HUMAN RELIABILITY	Bayesian Network – Lybia Drill, Urubama Drill, Bayesian Network	Excel MS E&P Risk Software
2010	Petrobras	HUMAN RELIABILITY	THERP, OAT, HFTA, SLIM, SPAH-R, STARH, HEART – Turbine start up task (REPAR).	Excel MS
2010	Petrobras	FTA	Urubamba Drill project	E&P Risk Software
2010	Petrobras	ETA	Urubamba Drill project	E&P Risk Software
2010	Petrobras	Bayesian network Human Reliability	Urubamba Drill project	E&P Risk Software
2010	Petrobras	Bayes Especialist elicitation	Urubamba Drill project	E&P Risk Software
2010	Petrobras	FTA	Caliph Drill Project	E&P Risk Software
2010	Petrobras	ETA	Caliph Drill Project	E&P Risk Software
2010	Petrobras	Bayesian network Human Reliability	Caliph Drill Project	E&P Risk Software
2010	Petrobras	Bayes Especialist elicitation	Caliph Drill Project	E&P Risk Software
2010 2009	Petrobras	Process Risk Management	Technical support to Safety Process management in ten refineries (Petrobras) based on audit, procedures review, training and coaching.	E&P Risk Software
2010	Petrobras	FMEA	FMEA coordination for UFCC Plant Turboexpansor (U-220 – REPLAN Refinery)	Excel MS
2009	Petrobras	QRA (QUANTITATIVE RISK ANALYSIS CONSEQUENCE, VULNERABILITY AND EFFECT)	QRA for Water Tank Quantitative Risk Analysis, s,	Software ALOHA
2009	Petrobras	QRA (QUANTITATIVE RISK ANALYSIS CONSEQUENCE, VULNERABILITY	REGAP OIL Tank Quantitative Risk Analysis	Software ALOHA

		AND EFFECT)		
2009	Petrobras	QRA (QUANTITATIVE RISK ANALYSIS CONSEQUENCE, VULNERABILITY AND EFFECT)	QRA for GLP Pipeline (REVAP refinery).	Software ALOHA
2010	2009	Independent Consultant	QRA (QUANTITATIVE RISK ANALYSIS CONSEQUENCE, VULNERABILITY AND EFFECT)	QRA for Amonia Vessel (ICE Fabric).
2010	Independent Consultant	QRA (QUANTITATIVE RISK ANALYSIS CONSEQUENCE, VULNERABILITY AND EFFECT)	QRA for Amonia Vessel (ICE Fabric 1).	Software ALOHA
2009	Independent Consultant	QRA (QUANTITATIVE RISK ANALYSIS CONSEQUENCE, VULNERABILITY AND EFFECT)	QRA for Amonia Vessel (ICE Fabric 2).	Software ALOHA
2009	Independent Consultant	QRA (QUANTITATIVE RISK ANALYSIS CONSEQUENCE, VULNERABILITY AND EFFECT)	QRA for Amonia Vessel (ICE Fabric 2).	Software ALOHA
2008	Petrobras	PHA	PHA for SEMI-BR P-55 (UN-RIO/ ATP-RO).	Excel MS
2008	Petrobras	PHA	Hydrogen Generation Unit (REGAP refinery).	Excel MS
2008	Petrobras	PHA	Oil treatment and Process Plant (5P).	Excel MS
2004 2008	Petrobras	HAZOP And SIL Analysis	HAZOP Coordination and SIL assessment for Natural Gas Treatment Unit (Cacimbas – ES).	Excel MS
2004 2008	Petrobras	HAZOP And SIL Analysis	HAZOP Coordination and SIL assessment for Reverse Osmose Plant (REPLAN – SP),	Excel MS
2004 2008	Petrobras	HAZOP And SIL Analysis	HAZOP Coordination and SIL assessment for Nafta Hydrotreating Unit (REVAP – SP).	Excel MS
2004 2008	Petrobras	HAZOP And SIL Analysis	HAZOP Coordination and SIL assessment for Petrochemical Unit (Riopolimeros).	Excel MS
2004 2008	Petrobras	HAZOP And SIL Analysis	HAZOP Coordination and SIL assessment for UFCC (U-103 / U-104).	Excel MS
2004	Petrobras	HAZOP And SIL	HAZOP Coordination and SIL	Excel MS

2008		Analysis	assessment for Water treatment Plant (UN-RNCE).	
2004 2008	Petrobras	HAZOP And SIL Analysis	HAZOP Coordination and SIL assessment for Atmospheric Distillation Unit (U-2100-REPAR).	Excel MS
2004 2008	Petrobras	HAZOP And SIL Analysis	HAZOP Coordination and SIL assessment for DEA Unit (U-22323).	Excel MS
2004 2008	Petrobras	HAZOP And SIL Analysis	HAZOP Coordination and SIL assessment for Nafta Hydrotreating Unit (U-306-REGAP).	Excel MS
2004 2008	Petrobras	HAZOP And SIL Analysis	HAZOP Coordination and SIL assessment for Atmospheric Distillation Unit (U-2110 - REMAM).	Excel MS
2004 2008	Petrobras	HAZOP And SIL Analysis	HAZOP Coordination and SIL assessment for UFCC (U- 2221 - REMAN).	Excel MS
2004 2008	Petrobras	HAZOP And SIL Analysis	HAZOP Coordination and SIL assessment for Turboexpansor - UFCC (U-220 – REPLAN),	Excel MS
2004 2008	Petrobras	HAZOP And SIL Analysis	HAZOP Coordination and SIL assessment for Hydrogen Generation Unit (REPAR).	Excel MS
2004 2008	Petrobras	HAZOP And SIL Analysis	HAZOP Coordination and SIL assessment for Natural Gas treatment Plant (Mexilhão).	Excel MS
2004 2008	Petrobras	HAZOP And SIL Analysis	HAZOP Coordination and SIL assessment for Hydrogen Generation Unit - UGH (U-38-RLAM).	Excel MS
2005	Petrobras	FMEA	Electric Generation Facility	Excel MS
2005	Petrobras	FMEA	Cooling Water Facility.	Excel MS
2003	VALE	Occupational and Safety Health (OHS) Management System implementation	OHS System implementation for seven pelletizing plant. Lead the OHS implementation during operation, System Hazard risk assessment analysis, employees training (500 employee's), safety tools and procedures implementation, internal safety audit process and external safety audit preparation and approvement based on score qualification.	Excel MS