

I-care™ | 4.0 SINCE '04 |



## TRAINING PORTFOLIO

UPLIFTING YOUR TEAM  
WITH THE RIGHT TRAINING

PARTNERING WITH





## INTRODUCTION



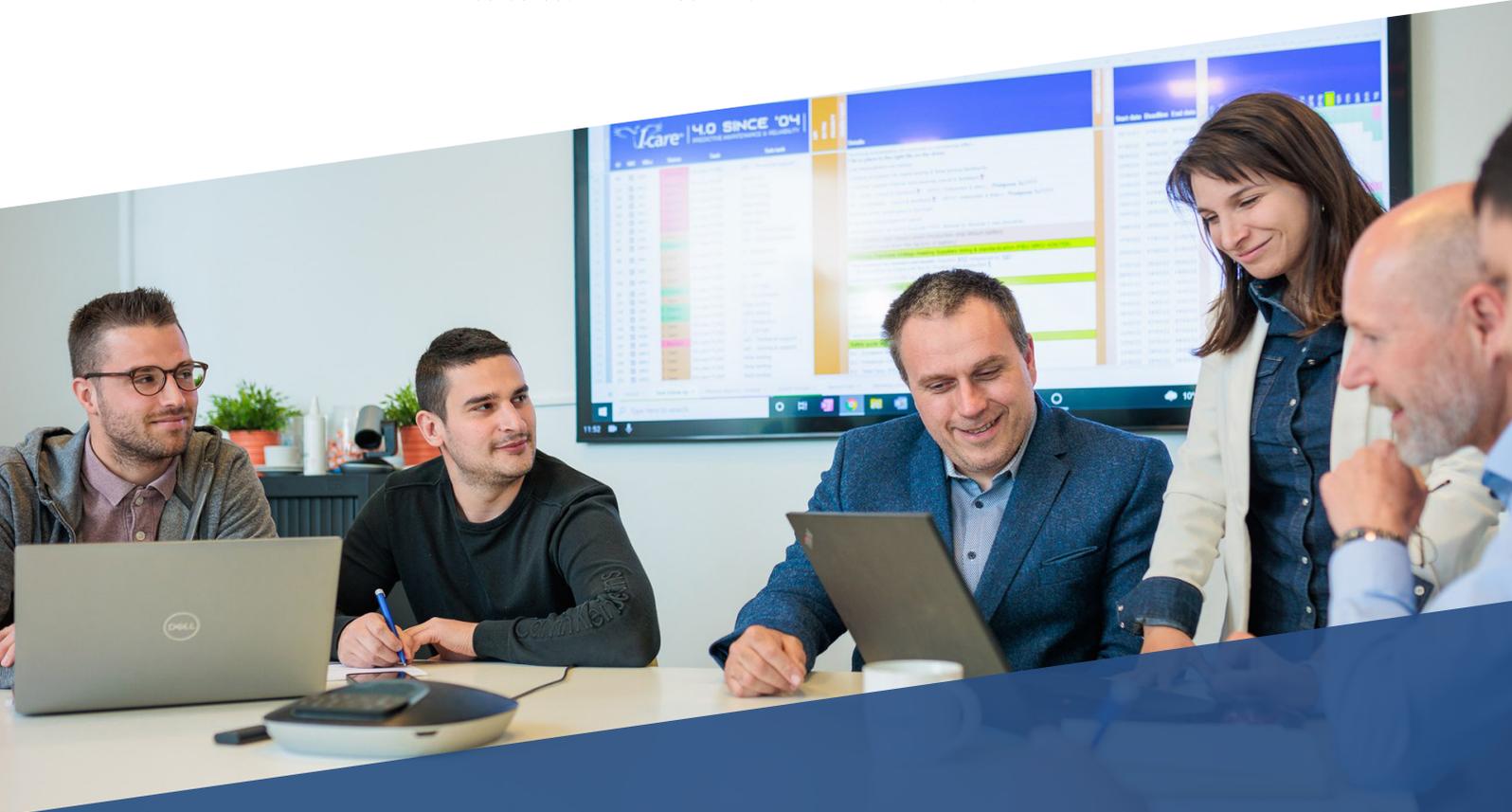
I-care™ has acquired an outstanding know-how in Predictive Analytics for Maintenance and Reliability Solutions.

Sharing knowledge and expertise is a key value of I-care. In an almost fully connected world companies need to rely on competent and skilled colleagues. This is needed because customer's demand are always increasing and everybody needs to react swiftly. Again, competence and skills are a key contributor in this matter.

I-care is proud to present its training catalog where you will find a large scope of asset related trainings given by our experienced colleagues.

If you want more information about a training or want to register, go to

[WWW.ICAREWEB.COM/TRAINING](http://WWW.ICAREWEB.COM/TRAINING)



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4.0-DDM-EN

# AI & DATA SCIENCE IN INDUSTRY: CONCEPTUALIZE, DEPLOY AND VALORISE YOUR (MAINTENANCE) STRATEGY



AVAILABLE LANGUAGES:



## DESCRIPTION:

The industry constantly strives to achieve the highest possible availability of its installations (assets). Among other things, it tries to achieve this by not having breakdowns between two consecutive planned preventive tasks.

Here, “Maintenance 4.0” can deploy its full potential. However, it is a comprehensive concept with concepts about identifying needs, connecting measurement systems, up to and including the use of artificial intelligence (AI). During this three-day training we will go through all these concepts in a logical order and with constant attention to their applicability. After this training, you will have all the keys in hand to make your 4.0 maintenance program a success.

## RECOMMENDED AUDIENCE:

Maintenance managers and engineers, reliability engineers, production managers, process engineers, IT and Data infrastructure managers, anyone dealing with operation and maintenance data of assets.

## YOU WILL LEARN:

A multi-faceted 7-step approach that helps you successfully execute a 4.0 project using intelligent data management, with a focus on visualization and making the right decision. An application path is proposed using tools defining the company’s strategic objectives, the 4.0 project prioritization matrix and the value sheet, describing the skeleton of a 4.0 project. Participants are asked to bring their own CMMS data, which can be analyzed using the I-Mining tool.

Through I-care’s “Maintenance 4.0” roadmap, we will cover the following elements:

- Converting failure mode detection into the right sensor and measurement system
- Integrating maintenance and process parameters
- The importance of connected data sources
- How to collect and import data at a central location
- Combining a business vision with data science aspects
- The importance of project selection
- The contribution of new methods based on artificial intelligence in maintenance

## COURSE DURATION:

3 days



# THE ESSENTIALS BASICS OF AI FOR TECHNICAL EXECUTIVES



## AVAILABLE LANGUAGES:



## DESCRIPTION:

In this hands-on course, you will learn to make (better) use of Artificial Intelligence applied in maintenance and asset management. In the future, you will also have to deal with Artificial Intelligence (AI) in your organisation. It is therefore important to get acquainted now with the possible applications of this technology and its impact on your tasks. After all, AI allows you to predict upcoming breakdowns, thus avoiding unplanned downtime and technical incidents.

## RECOMMENDED AUDIENCE:

Maintenance managers, asset managers, reliability and/or maintenance engineers, service managers, ICT managers, group maintenance and reliability coordinators, operations/production managers, 1st line managers and executives

## YOU WILL LEARN:

This one-day training will present the building blocks and terms for you, as a (future) manager in maintenance and reliability, to successfully introduce AI into your organisation. We touch on technical aspects such as software and data but equally on the organisational and human impact of AI, as well as identifying business cases for AI and assessing your organisation's maturity around AI.

### Learning objectives:

- Understanding what AI means and how it can be applied in maintenance and operations
- Defining some AI analysis techniques and commonly used terms in AI
- Understanding the :
  - different maturity levels of applying AI
  - impact of AI algorithms on quality, reliability, and productivity
  - possibilities of data capture
  - importance of maintenance data quality/quality maintenance event reports
  - importance of cyber security and data security and how this can be addressed
- Learning to identify and select potential AI cases
- Understanding the :
  - elements of a business case for the implementation of an AI project in maintenance
  - stakeholders in an AI project
  - impact of AI on your team
- Understanding how AI can support our business
- Understanding what it takes to implement an AI project
- Learning how to monitor and maintain AI models

## COURSE DURATION:

1 day



# THE ESSENTIALS BASICS OF AI FOR MAINTENANCE & RELIABILITY ENGINEERS



## AVAILABLE LANGUAGES:



### DESCRIPTION:

In this programme, you will learn to make (better) use of Artificial Intelligence applied in maintenance and asset management as a maintenance or reliability engineer. After all, AI allows to predict upcoming failures, thus avoiding unplanned downtime and technical incidents. In the future, you will also have to deal with Artificial Intelligence (AI) in your organisation. It is therefore important to get acquainted now with the possible applications of this technology and its impact on your range of tasks. BEMAS has therefore set up an awareness training for maintenance & reliability engineers around AI in collaboration with various specialists in the field.

### RECOMMENDED AUDIENCE:

Reliability and/or maintenance engineers, and any technical profile in maintenance and reliability who is interested in the building blocks of AI, in the technical aspects such as software and data but equally in the organisational and human impact of AI.

### YOU WILL LEARN:

In this 2-day course, we will introduce the building blocks and terms for you as a technical engineer in maintenance and reliability to successfully introduce AI into your organisation. We touch on technical aspects such as software and data but equally on the organisational and human impact of AI.

### Learning Objectives:

- Understand what AI means and how it can be applied in maintenance and operations
- Be able to define some AI analysis techniques and commonly used terms in AI, predictive analytics and big data analytics
- Understand the different maturity levels of applying AI in maintenance and operations
- Understanding the impact AI algorithms can have on quality, reliability and productivity
- Understanding the possibilities of data capture
- Understanding the importance of maintenance data quality / quality maintenance intervention reports for the (later) application of AI
- Understanding the importance of Cybersecurity and Data Security and how this can be addressed
- Understand the opportunities to capture data through additional and existing sensors and devices
- Understand the possibilities for M2M communication, wireless and wired, over short and long distances
- Understand what software tools and data platforms are available to run and manage AI applications
- Understand critical success factors to achieve reliable results with AI and predictive analytics for maintenance applications

### COURSE DURATION:

2 days



# INTRODUCTION TO PREDICTIVE MAINTENANCE (PDM)



## AVAILABLE LANGUAGES:



## DESCRIPTION:

This course is designed to teach the fundamental principles of the five predictive maintenance (PdM) technologies most prevalent in industry: vibration analysis, infrared thermography, airborne and structure-borne ultrasonic, oil analysis, and motor circuit analysis. Upon completion of the course, attendees will have an understanding of the capabilities of the technologies along with the common traps that may be encountered during application.

## RECOMMENDED AUDIENCE:

This course is recommended for Managers, Engineers, Planners, and Supervisors who are responsible for metrics, tracking, and use of information generated by PdM programs.

## YOU WILL LEARN:

- The principles of PdM and why it is so powerful
- How PdM reduces overtime and emergency work
- How to strike the right balance between PM and PdM
- How much PdM is enough – what you can learn from Best Practice organizations and benchmarks
- How to implement a PdM program using lean tools to make your PdM program self-funding
- The common language of PdM – key terms and definitions you should know
- How to identify mechanical, electrical, and stationary failure modes using PdM technologies:
  - Vibration analysis
  - Infrared thermography
  - Oil analysis and reliability centered lubrication
  - Ultrasound
  - Electrical motor analysis
- How to identify the common traps of each PdM technology

## COURSE DURATION:

2 days



# INTRODUCTION TO VIBRATION ANALYSIS



## AVAILABLE LANGUAGES:



## DESCRIPTION:

This one-day course is aimed at people who come into contact with the application of vibration analysis in the support of a predictive maintenance program. It is an excellent training experience for those who wish to explore the possibilities provided by this analysis technique. Numerous real-world examples illustrate how and where this maintenance philosophy can be applied. The course is supported by an English manual.

## RECOMMENDED AUDIENCE:

This course is recommended for Maintenance Leaders, Operations/Production Leaders, Maintenance Skilled Trades, and Reliability Engineers.

## YOU WILL LEARN:

Overview of the different maintenance philosophies:

- Reactive Maintenance
- Preventive Maintenance (Time based maintenance)
- Predictive Maintenance (Condition Monitoring)
- Proactive Maintenance
- Basic concepts of vibration analysis: time signal, FFT spectrum, etc.
- Overview of types of vibration sensors, application domains, pros and cons, etc.
- Vibration analysis in practice; detection of problems such as:
  - o Unbalance
  - Resonance
  - Alignment errors
  - Rolling element bearing defects
  - Detection of balancing errors

## COURSE DURATION:

This course has two variations, a 1 day and a 2 days version.

The 2 days program includes besides the above:

- Visualization of the above mentions failure modes on a test case
- Practical tips in defining specifications for third party involvement
- Practical demonstration



# VIBRATION ANALYSIS MASTER CLASS



## AVAILABLE LANGUAGES:



## DESCRIPTION:

This course is aimed at people who are currently closely involved in the application of vibration analysis techniques in support of a predictive maintenance program. Leveraging numerous practical examples, advanced vibration techniques will be presented in order to expose and detect complex mechanical and electrical problems in rotating machines. A variety of rotating machine applications are presented to include a range from simple pump or fan arrangements to more complex machines such as extruders, compressors, filling systems, and presses. Special attention is also given to the monitoring of slow rotating shafts with examples provided from paper, food and beverage, and chemical industry applications. The course is supported by an English manual.

## RECOMMENDED AUDIENCE:

This course is recommended for analysts who wish to study vibration analysis techniques and applications, as well as maintenance leaders and reliability engineers. Some experience in vibration analysis is recommended.

## YOU WILL LEARN:

- Overview of the theoretical concepts of vibration analysis techniques to detect rotating equipment problems:
  - Time Signal and FFT Spectrum
  - Amplitude Modulation
  - The Concept Phase
- Detection of problems such as:
  - Imbalance
  - Alignment errors
  - Gear Wear
  - Resonance
  - Cavitation
  - Bearing Damage
  - Lubrication Defects
  - Belt Problems
- Vibration analysis and electrical current analysis for the detection of electrical problems on AC and DC motors
- Advanced analytical techniques such as:
  - Order tracking
  - High frequency analysis techniques (Enveloping, PeakVue™)
  - Synchronous averaging
  - Introduction to the analysis technique ODS (Operating Deflection Shapes)

## COURSE DURATION:

2 days



## VIBRATION ANALYSIS CAT I (ISO 18436-2) CERTIFICATION



### AVAILABLE LANGUAGES:



### DESCRIPTION:

This course provides a basic understanding of the science, terminology, and analysis techniques used in the application of vibration analysis to detect rotating equipment defects. This course concludes with an examination that, when successfully completed, will certify the participant as a Vibration Analyst ISO Category I. Subjects presented include measurement technology, the use of a data collector, and practical aspects used during the design of a predictive maintenance program. The theoretical portion of this training, presenting the basics of vibration analysis, is enhanced with numerous real-world examples.

### RECOMMENDED AUDIENCE:

Specific knowledge is not required for this program, but in order to obtain certification as a Vibration Analyst ISO Category I, the participant shall, in accordance with the ISO 18436 standard, possess a minimum of 6 months of practical experience in the application of vibration analysis techniques. If the participant does not possess this experience at the time of the examination, a temporary certificate will be issued, with full certification being provided upon completion of the professional experience requirements. This certification will be of value to novice Vibration Analysts. During and for an extended period following this training, the participant will be provided access to the iLearn Vibration Analysis software that may be used for independent study.

### YOU WILL LEARN:

- Basic theory of vibration analysis (amplitude, frequency, FFT spectrum, phase measurements)
- The design and application of different types of vibration sensors and measurement devices
- Obtaining measurement information with data collectors
- Practical aspects of predictive maintenance
- Use of vibration standards and alarm values
- Interpretation of measurement data, to include identification of imbalance, alignment, and bearing damage
- Basic knowledge of typical vibration components detected on pumps, fans, compressors

### COURSE DURATION:

3 days, with examination provided on the morning of day 4



## VIBRATION ANALYSIS CAT II (ISO 18436-2) CERTIFICATION



### AVAILABLE LANGUAGES:



### DESCRIPTION:

This 4 days course provides a deeper understanding of the vibration analysis techniques and methods. The program concludes on the morning of the 5th day with an examination that, upon successful completion, will allow the participant to achieve certification as a Vibration Analyst ISO Category II. This course focuses on the analysis of complex problems such as machine resonance and vibration analysis of more complex machines such as gearboxes and low-speed applications. This program provides a more thorough understanding of the theoretical background of vibration analysis when compared to the Cat. I course, with concepts such as sampling, aliasing, and windowing being presented in detail. During and for an extended period following this training, the participant will be provided access to the iLearn Vibration Analysis software that may be used for independent study.

### RECOMMENDED AUDIENCE:

Specific knowledge is not required to attend this training program, but in order to obtain certification as a Vibration Analyst ISO Category II, the participant shall, in accordance with the ISO 18436 standard, possess a minimum of 18 months of practical experience in the application of vibration analysis techniques. If the participant does not possess this experience at the time of the examination, a temporary certificate will be issued, with full certification being provided upon completion of the professional experience requirements. This certification will be of value to Vibration Analysts with a minimum of 18 months of experience in measurement and analysis.

### YOU WILL LEARN:

- Basic concepts of vibration analysis and data acquisition
- Signal processing (resolution, aliasing, windowing, etc.)
- Implementation of vibration analysis techniques on motors, fans, pumps, slow speed equipment, and gearboxes
- Measurement of natural frequencies and resonance
- Determination of criticality in problem diagnosis

### COURSE DURATION:

4 days, with examination provided on the morning of day 5



## VIBRATION ANALYSIS CAT III (ISO 18436-2) CERTIFICATION



### AVAILABLE LANGUAGES:



### DESCRIPTION:

The Category-III course covers five days, with an additional day for review and the exam, is intended for people who are confident with spectrum analysis but who wish to push on and learn more about signal processing, time waveform and phase analysis, cross-channel testing, machine dynamics, and fault correction. You will learn to diagnose all of the common fault conditions with rolling element and sleeve bearing machines, by utilizing time waveforms, phase readings and other techniques to diagnose faults. You will also learn machine dynamics (natural frequencies, resonance, etc.) and how to perform resonance testing and correct resonance problems. The course also covers single and cross-channel measurement capabilities of your analyzer. And after completing the CAT-III course, you will be able to set and run a successful vibration program, and mentor the junior analysts.

### RECOMMENDED AUDIENCE:

The Vibration Specialist Advanced course is intended for personnel who have at least two years vibration analysis experience and a solid understanding of vibration theory and terminology. This course is designed for the senior vibration analyst and program manager who must be able to diagnose the widest range of vibration related fault conditions, perform balancing and alignment, and understand, diagnose and correct resonance faults. Category III certification requires a demonstrated 36 months experience in vibration analysis, completion of the Category III course and successfully pass the Category III vibration analyst examination, and previously certified as a Category II vibration analyst by a recognized certification body.

### YOU WILL LEARN:

- Review of condition monitoring technologies and the ISO standards
- Signal processing and data acquisition
- Time waveform analysis
- Phase analysis
- Dynamics (natural frequencies and resonance)
- Testing for natural frequencies
- Operating Deflection Shape (ODS) analysis
- Modal analysis and intro to FEA
- Correcting resonances
- Rolling element bearing fault detection
- Journal bearing fault detection
- Electric motor testing
- Pumps, fans and compressors
- Gearbox fault detection
- Corrective action
- Running a successful condition monitoring program
- Acceptance testing

### COURSE DURATION:

5 days, with examination provided on the morning of day 5



# INTRODUCTION TO THERMOGRAPHY



## AVAILABLE LANGUAGES:



### DESCRIPTION:

In a modern maintenance approach the use of thermography as a preventive and condition based monitoring tool becomes more important year after year. The applications are also growing and measurement equipment becomes in the reach of every organization. After this introduction training you will understand the basic principles of thermography and recognize the possible added value for your maintenance strategy.

No prior knowledge is required for this course.

### RECOMMENDED AUDIENCE:

Everyone who wants to understand the basic concepts of thermography in a technical environment.

### YOU WILL LEARN:

- Introduction in infrared thermography and electromagnetic spectrum
- Measuring temperatures with IR camera's
- Emissivity measuring and interpretation
- Development of inspection reports
- How to prevent mis interpretations (eg hot spots, reflections, ...)

### COURSE DURATION:

½ day training



## THERMOGRAPHY LEVEL I (ISO 18436-7) CERTIFICATION



### AVAILABLE LANGUAGES:



### DESCRIPTION:

This Level I certification course is offered in conjunction with the ITC (Infrared Training Center) and covers the application of thermography as a predictive maintenance technique. This course focuses on the application of these techniques for new infrared camera users. A certification examination is provided on the morning of the fifth day of training.

### RECOMMENDED AUDIENCE:

This course is recommended for Maintenance Technicians and Specialists. No experience is required.

### YOU WILL LEARN:

- Introduction to thermographic imaging and measurement systems
- Accurate temperature measurement with a thermal imaging camera, taking into account distance, emissivity, and reflectance
- Interpreting thermographic images
- Professional drafting of reports using the latest software programs
- Avoid wrong interpretations (reflections, hot spots, indirect results, etc.)
- Intensive hands-on training modules to make the most of the thermographic cameras

### COURSE DURATION:

4 days, with examination provided on the morning of day 5



## THERMOGRAPHY LEVEL II (ISO 18436-7) CERTIFICATION



### AVAILABLE LANGUAGES:



### DESCRIPTION:

This Level II certification course is offered in conjunction with the ITC (Infrared Training Center). This training focuses on the application of thermography as a predictive maintenance technique and the more advanced application of these techniques for experienced infrared camera users. A certification examination is provided on the morning of the fifth day of training.

### RECOMMENDED AUDIENCE:

This course is recommended for Level I Certified Thermographers. A minimum of 6 months of practical experience is required.

### YOU WILL LEARN:

- How to strengthen the Level I thermography knowledge with the latest technology and applications
- Broaden your ability to apply infrared thermography
- Infrared theory and heat transfer
- Development of thermographic inspection routes
- Infrared thermography and the electromagnetic spectrum
- Calculation of associated software costs
- Emissivity measuring and interpretation
- Improving the quality of the thermographic analysis
- Infrared inspection report development

### COURSE DURATION:

4 days, with examination provided on the morning of day 5



# INTRODUCTION TO ULTRASONIC MEASUREMENT



## AVAILABLE LANGUAGES:



### DESCRIPTION:

Ultrasonic inspection is one of the most standard used methods for leak detection, monitoring the condition of bearings, electrical applications, steam traps analysis, valve inspection etc.

Ultrasonic measurement has to be part of a professional preventive maintenance plan. This half a day course will give you a very good understanding of the ultrasonic basics.

### RECOMMENDED AUDIENCE:

A very useful and practical course for all new and starting maintenance technicians.

### YOU WILL LEARN:

- Introduction to preventive maintenance
- Airborn and mechanical ultrasonic tools
- Introduction to the detection of electrical problems with ultrasonic measurements
- Introduction to software applications for ultrasonic measurements
- Overview of possible hardware

### COURSE DURATION:

½ day : best in combination with “introduction to thermography”

USD-L1-EN



# ULTRASONIC MEASUREMENT LEVEL I (ISO 18436-8) CERTIFICATION



AVAILABLE LANGUAGES:



## DESCRIPTION:

This two-day course is aimed at people who want to focus on reducing energy losses through the detection of air leaks using ultrasonic technology. This course covers applications such as monitoring of steam traps, optimizing lubrication of bearings, density control valves, and analysis of simple flow valves. This course contains many practical examples that translate directly into every branch of industry. A certification examination is provided on the morning of the third day of training.

## RECOMMENDED AUDIENCE:

This course is recommended for Maintenance Technicians and Specialists. No experience is required.

## YOU WILL LEARN:

- Implementation of ultrasonic measurements in a Predictive Maintenance program
- What is ultrasound?
- Detection of compressed air leaks using ultrasonic technology
- How to identify a faulty steam trap
- Control of lubrication
- How to quickly find leaks in any industrial environment
- How to apply sound based techniques to lubrication tasks
- How to apply sound based techniques to predict mechanical failures
- The effects of electrical faults and how to safely detect problems
- Characteristics of leaks
- Calculation of leakage and potential savings

## COURSE DURATION:

2 days, with examination provided on the morning of day 3



# INTRODUCTION TO MCA (MOTOR CIRCUIT ANALYSIS)



## AVAILABLE LANGUAGES:



## DESCRIPTION:

This course is aimed for people responsible for the executing condition monitoring and who likes to extent their knowledge in the field of MCA (Motor circuit Analysis). This course will give you a good understanding of the typical failure patterns of a large set of types of electro motors. For the different failure patterns, different MCA approaches are needed. The selection of a correct measurement method is not always straight forward. Unreliable motors can be the cause of significant power quality problems.

## RECOMMENDED AUDIENCE:

- Maintenance technicians responsible for the inspection of electro motors
- No prior knowledge is required

## YOU WILL LEARN:

- Recognizing different type of motors
- Identifying the typical failures with electro motors
- Measurement methods for monitoring the condition of electric motors: from field measurement to online measurement
- Methods for measuring low and high voltage systems
- The pro's and con's of the different measuring methods
- The value of measuring Power Quality

## COURSE DURATION:

1 day



# ROOT CAUSES FAILURE ANALYSIS OF ELECTRIC MOTORS



AVAILABLE LANGUAGES:



## DESCRIPTION:

Training in partnership with EASA. One of the most important factors to consider when repairing and maintaining motors is to understand why they have failed.

This training course offers participants a unique opportunity to review a documented catalog of possible causes of failure on electric motors. This course is aimed at anyone interested in motor maintenance and repair. It will provide a better understanding of failures on electric motors. A comprehensive English-language manual is provided, including plenty of photos of a wide range of real-life failures, with probable causes listed, and a clear methodology for confirming the probable cause of each failure. The training focuses on all types of common and unusual failures, broken down by components

## RECOMMENDED AUDIENCE:

This training course is aimed at electrical maintenance managers and technicians, as well as motor repairers who want to learn about new developments in electrical testing.

## YOU WILL LEARN:

- Methodology of Root Cause Analysis
- Bearing problems
- Problems with windings
- Problems with rotors
- Problems with shafts
- Mechanical problems
- DC motor failures
- Synchronous motor failures
- Problems with accessories
- Case studies, ...

## COURSE DURATION:

2 days



# LASER ALIGNMENT



## AVAILABLE LANGUAGES:



### DESCRIPTION:

Mastering the technique of laser alignment

### RECOMMENDED AUDIENCE:

This course is recommended for operators and maintenance technicians

### YOU WILL LEARN:

- Why aligning a rotating equipment?
  - Technical justifications
  - Economic justifications
- Definition of misalignment:
  - Angular alignment
  - Parallel alignment
  - Complex alignment
- The different types of couplings
  - Presentation of the material
- Vibration generated by misalignment
  - On-site alignment
  - The rule method
  - The comparator method
  - The laser method
- Machine preparation
- The correction of loose foot
- On-site precision alignment
- Alignment quality standards

### COURSE DURATION:

1 day theoretical concepts and 1 optional day practice



# DYNAMIC BALANCING



## AVAILABLE LANGUAGES:



### DESCRIPTION:

Balancing equipment

### RECOMMENDED AUDIENCE:

Operators and maintenance technicians

### YOU WILL LEARN:

- Why balancing equipment?
  - Technical arguments
  - Economic arguments
- Definition of imbalance:
  - The static imbalance
  - The torque imbalance
  - The dynamic imbalance
- How can I detect an imbalance?
  - Phase concepts
  - Distinction between an imbalance and a resonance
- Solutions for resonance problems:
  - Balancing on site
  - Method 3 points;
  - Method phase;
  - Bank balancing;
- The quality standards for balancing;

### COURSE DURATION:

1 day

### TRAINING MATERIAL:

Balancing bench



# MECHANICAL TRANSMISSIONS



## AVAILABLE LANGUAGES:



### DESCRIPTION:

The aim of this two-day course is to identify the different types of transmission encountered in industry, to make the appropriate adjustments within the required tolerances, to carry out proper preventive maintenance and to provide the necessary tools for self-diagnosis of faults linked to this type of transmission.

### RECOMMENDED AUDIENCE:

This course is designed for maintenance managers, supervisors, operators and technicians.

### YOU WILL LEARN:

- Maintenance strategies
- Identification of different types of mechanical transmissions (belts, chains, couplings, etc.)
- Pulley/belt drive adjustments
  - Laser alignment of pulleys
  - Belt tension adjustment using different methods
  - Sprocket/chain set alignment
- Preventive/predictive checks for this type of transmission
- Self-diagnosis and troubleshooting assistance

### COURSE DURATION:

2 days



# MACHINE LUBRICATION TECHNICIAN MLT 1 (ICML) CERTIFICATION



## AVAILABLE LANGUAGES:



## DESCRIPTION:

This course focusses on the importance of the lubrication on the reliability of your assets. The most appropriate methods and practices of (re)lubrication will explained. With this training you will receive a good understanding to master lubrication management.

## RECOMMENDED AUDIENCE:

This course is aimed at Reliability engineers, maintenance experts, maintenance technicians occupied with preventive maintenance.

## YOU WILL LEARN:

- Maintenance strategies
  - Lubrication theory
  - Tribology
  - Lubricant function
  - Liquid and solid lubricants
  - Composition
  - Properties
  - Lubricant choices
  - Properties
  - Additives
- Use
  - Application and draining methods
  - Relubrication frequency
  - Lubrication good practices
  - Lubrication in predictive maintenance
  - Lubricant filtration
  - Storage management of lubricants
- Questions/answers
- MLT 1 Examination according to ICML

## COURSE DURATION:

- 2 days with examination on the morning of the day 3
- Best in combination with MLA1 for a total of 3.5 days

LUE-A1-EN



# MACHINE LUBRICATION TECHNICIAN MLA 1 (ISO 18436-4) CERTIFICATION



AVAILABLE LANGUAGES:



## DESCRIPTION:

This course emphasizes the importance of lubrication on the reliability of your installation. Gives you a clear insight into the main lubrication characteristics. The course also illustrates the main lubrication methods and applications with regard to the different oil analyzes.

## RECOMMENDED AUDIENCE:

This course is intended for Reliability and Maintenance Engineers, senior maintenance technicians and anyone involved in the implementation of reliability strategies and methods. Having lubrication experience of minimum 12 months and good technical insights are advised for this training. To obtain the certificate, you must pass the exam. Participation in the exam is not a requirement for participation in the course.

## YOU WILL LEARN:

- Good practices of oil sampling
- Defaults detection and basic wear debris analysis
- Contamination control and proactive maintenance
- Lubricants analysis and routine actions
- Maintenance strategies
- Solid and liquid lubrications principles
- How to choose lubricant and application method
- Lubricants storage management
- Presentation of real case studies for each fault
- Questions/answers
- ICML MLA1 examination

## PREREQUISITES:

- 12 months of practical experience in lubrication field\* ;
- Basis technical training ;
- Necessary to pass the exam. Not mandatory to attend the training.

## COURSE DURATION:

3 days with examination on the morning of the day 4



# LUBRICATION EXCELLENCE: FROM NOBLE INTENTIONS TO SUSTAINABLE IMPLEMENTATION



## AVAILABLE LANGUAGES:



### DESCRIPTION:

This one day introduction course to Reliability Centered Lubrication (RCL) illustrates in a hands-on way the importance of pulling lubrication to a higher level. After following this course you will be able to recognize the opportunities where RCL can improve the reliability of your assets.

### RECOMMENDED AUDIENCE:

Maintenance specialists who want to perform condition monitoring based on oil analysis.

- No experience required.
- Knowledge of lubrication is an asset.

### YOU WILL LEARN:

Introduction to the added value of lubrication

- How lubrication contributes to the reliability of equipment
- The value of lubrication within a maintenance strategy
- Factors influencing lubrication

Practical tips for deploying RCL

- Manual versus automatic lubrication
- Best practices for oil sampling
- How to find easy – low hanging fruit – improvements

Building ownership and the roadmap towards lubrication coach

- The fundamentals for a lubrication culture
- Building a roadmap

Key elements for the development of an effective lubrication job plan

- Useful KPI's
- Quick Scan Maturity tool
- Micro gap-analysis for RCL

### COURSE DURATION:

1 day



# PROACTIVE LUBRICATION: A PRAGMATIC APPROACH



## AVAILABLE LANGUAGES:



### DESCRIPTION:

Maintenance today means much more than lubricating at regular intervals and repairing after asset failure. Intelligent processes and methodologies are used to optimize plant reliability. In this 3-day training course, you will learn how to manage your lubrication plan and all the activities that revolve around lubrication, with the aim of increasing plant reliability and equipment availability.

### RECOMMENDED AUDIENCE:

Maintenance managers, supervisors, team leaders, technicians and others with a leadership role in lubrication management. • No experience required.  
• Knowledge of lubrication is an asset.

### YOU WILL LEARN:

You will learn about possible failure modes and how to choose the right type of maintenance. You will also learn how to carry out correct oil sampling to make the analysis reliable and the resulting actions as effective as possible, and you will learn about the characteristics and properties of base oil, additives and greases.

#### Day 1

- The positive effect of proactive lubrication activities on equipment reliability
- Causes of equipment failure
- Why adopt a proactive lubrication approach?
- Identify your current strategy and the impact on profitability
- Maintenance strategies
- Tribology
- Friction, wear, lubrication
- The role of lubricants
- The Stribeck curve
- Interpretation of kappa value
- Base oil
- Formulation and API group of different oils
- Viscosity, viscosity index and the consequences of choosing the wrong oil
- Food grade lubricants
- Fire-resistant lubricants
- Additives
- The essential role of additives



# PROACTIVE LUBRICATION: A PRAGMATIC APPROACH



## AVAILABLE LANGUAGES:



- Characteristics of different additives
- Why choose a grease?
- Grease composition
- NLGI grade
- Selection criteria
- Lubrication methods
- Grease compatibility

### Day 2

- Oil analysis
- Sources of contamination
- Good sampling practices
- Oil analysis: predictive and/or proactive approach?
- On-site or off-site laboratory
- Interpretation of results, Tri-Vector, Trend, Reports and Alarm parameters
- Different types of filtration
- Role of oil analysis in equipment monitoring
- Storage and handling
- Methods of storage and stock rotation
- Lubricant coding, good procedures
- Parameters influencing lubricant service life

### Day 3

- Approach to lubrication excellence
- Positioning audit
- Bad practices
- The lubricator's role
- Lubrication plan
- Lubrication rounds and appropriate equipment
- Example of cost calculation if poor lubrication leads to breakage
- Continuous improvement
- Certification and qualification
- Observation of performance indicators

## COURSE DURATION:

3 days



# LUBE TECHNICIAN : LUBRICATION MAINTENANCE IN PRACTICE



## AVAILABLE LANGUAGES:



## DESCRIPTION:

This Basic Lubrication Technician course, is a very practical training that links the theoretical knowledge of lubrication to the practical side of lubrication. Participants of this course will be able to recognize opportunities and translate some basic lubrication principles into actions that contribute to the overall reliability of your installations, thus saving costs.

## RECOMMENDED AUDIENCE:

Lubrication and Maintenance specialists who want to increase the operational reliability of their assets....

- No experience required.
- Knowledge of lubrication is a plus.

## YOU WILL LEARN:

- Why lubricate?
- Function of lubrication?
- Importance of lubrication and how to save expenses through proper lubrication?
- Important concepts: viscosity, viscosity index and its importance
- Basic theory of lubrication, aquaplaning and construction to Stribeck
- Difference between lubrication (pumping grease) and lubrication
- When oil and when grease?
- General overview of oil types and their applications, mineral versus synthetic, ISOVG?
- What is grease?
- What is consistency grease and when to use what? NLGI?
- General overview of grease types and their applications
- Bearing lubrication, when is a bearing high or low speed?
- How to quickly determine simple grease volume for post-lubrication?
- How much grease should be applied to new bearings and what do I need to consider?
- Insight into bearing lubrication, location of grease nipples?
- Over-lubrication, under-lubrication, when is this important and what is it?
- Practical insights
- Gearboxes, difference between gearbox and worm gearbox regarding lubrication
- Grease or oil lubrication in gearboxes?
- How to determine oil for which gearbox?
- Chain lubrication

LUT-IN-EN



# LUBE TECHNICIAN : LUBRICATION MAINTENANCE IN PRACTICE



AVAILABLE LANGUAGES:



- What is a good chain lubricant?
- Hydraulic systems practical lubrication
- Linear guides in practical lubrication terms
- Electric motors in a practical lubrication context
- Short overview and practicalities of automatic lubrication systems
- General tips about lubrication tools

**COURSE DURATION:**

1 day



# HOW TO DEVELOP A FAILURE DRIVEN MAINTENANCE PLAN?



## AVAILABLE LANGUAGES:



## DESCRIPTION:

The aim of this two day program is to introduce the fundamental concepts that will allow you to build a failure mode driven maintenance plan. It is important to balance the risk of failure with the cost to preventing the failures. This training will enhance your capabilities to develop or to contribute to the effectiveness of a maintenance plan.

## RECOMMENDED AUDIENCE:

This course is ideal for Managers, Engineers, Planners and Supervisors responsible for the development and implementation of a maintenance strategy.

## YOU WILL LEARN:

- Introduction: How to identify improvement initiatives
- The principles of predictive maintenance and why it is so powerful
- Definition of a failure mode, effect and root cause
- Introduction of the different failure analysis tools (RCM, FMEA)
- How to select correctively the most appropriate predictive methods
- Identifying the fundamental requirements to develop an effective maintenance plan
- Building an asset health matrix
- How to select the assets which should be included in your predictive maintenance plan
- How to find a correct balance between the number of preventive and predictive tasks
- How do you integrate a new maintenance plan into an existing one
- Determine which failure mode can be identified through ultrasonic analysis (airborne & structure-borne)
- Determine which failure mode can be identified through thermographic assessment
- Determine which failure mode can be identified through vibration analysis
- Determine which failure mode can be identified through oil analysis
- Determine which failure mode can be identified through MCA analysis (on-line/off-line)
- Identify error and limitations of the different predictive methods
- How to initiate a predictive maintenance program (including training and hardware requirements)
- Introduction to asset health and how to measure it
- Exercise on functional hierarchy and FMEA

## COURSE DURATION:

2 days



# EFFECTIVE MAINTENANCE PLANNING AND SCHEDULING WITH BUSINESS GAME I-PLAN



## AVAILABLE LANGUAGES:



## DESCRIPTION:

This course makes use of I-care's business game - I-Plan - to explain the maintenance planning and scheduling best practices. The more we can reduce time needed to search for parts, tools, and drawings; the more we can reduce waiting for jobs to be assigned, the more we use our maintenance force efficiently and the more we streamline the production process. The course covers the benefits of planning and scheduling; the processes of work identification, estimating work, managing backlog, scheduling work, and gathering and analyzing equipment history, and how to track and interpret maintenance metrics. The scope of the course addresses routine maintenance as well as line stops.

## RECOMMENDED AUDIENCE:

This course is recommended for Maintenance Planners, and Schedulers. It would also benefit Maintenance Supervisors or Managers wishing to gain a comprehensive understanding of planning and scheduling best practices.

## YOU WILL LEARN:

- The benefits of planning and scheduling
- How to reduce waste within the workorder flow
- Define roles and responsibilities in the planning and scheduling process
- Effectively identify and prioritize work
- Building effective job plans
- Estimate time
- Understanding, calculating and managing Backlog
- Schedule routine daily, weekly, and monthly maintenance tasks
- Difference between routine maintenance and shutdowns
- Risks of a shutdown
- The different steps in a shutdown process
- Calculating the critical path
- Select appropriate indicators for the follow-up of the workorder flow

## COURSE DURATION:

3 days including the full exploration of the business game I-Plan



# RELIABILITY ENGINEERING FUNDAMENTALS



## AVAILABLE LANGUAGES:



## DESCRIPTION:

This course is designed to teach you the principles of improving asset management and maintenance decision making using proven reliability engineering principles. Our industry savvy instructors will teach you how the application of reliability engineering fundamentals improves equipment reliability in the manufacturing environment. This course will deliver you the knowledge of when and how to use the principles of reliability engineering to improve the availability.

## RECOMMENDED AUDIENCE:

This course is recommended for Maintenance Managers, Reliability and Maintenance Engineers, Top Level Maintenance Technicians, Production Managers, Plant Engineers, and anyone who is involved in Reliability Engineering strategies or methodologies.

## YOU WILL LEARN:

- Why you need to invest in Reliability Engineering
- How to convey the principles of reliability engineering to others in your organization
- How to get to Failure mode driven Maintenance strategies
- The importance of a criticality analysis
- Important terms and definitions in reliability statistics and Failure Reporting, Analysis, and Corrective Action System (FRACAS)
- How to apply reliability statistics to improve asset management
- What the Life Cycle Costing (LCC) philosophy is and how to perform LCC analysis
- The importance of RCM and RCM philosophies, and its differences
- Root Cause Analysis (RCA)
- Know what Condition Monitoring technique to use in order to identify mechanical, Electrical or static defects
- The principles behind reliability KPI's and Metrics

## COURSE DURATION:

3 days



# MAINTENANCE BEST PRACTICES:

## A guidance to your maintenance selfassessment



### AVAILABLE LANGUAGES:



### DESCRIPTION:

The Introduction to Maintenance Best Practices is a one-day training program designed to explain to participants the basics of maintenance practices. Serving as a guidance to your maintenance selfassessment, the I-care Dependability Model will provide the foundation for individuals who are new to maintenance or those looking to structure their maintenance in the state of the art. Through a mix of theoretical concepts powered by trainer experience, participants will gain insights into maintenance principles, strategies, and best practices that can be applied across various industries.

### RECOMMENDED AUDIENCE:

Maintenance manager; Supervisors; Reliability managers; Operations Managers; Business units leaders

### YOU WILL LEARN:

- Introduction
- Assessment Model : dependability Levels
- Level 0 : The Fundamentals
  - QHSE / Cost Control / Leadership and management
- Level 1 : Preventive Maintenance Implementation
  - Asset Catalog / Skills / Spare parts / Work Execution Management
- Level 2 : Proactive Maintenance Implementation
  - Reliability and defect elimination / Maintenance plan optimization / Shutdown
- Level 3 : Organisational excellence
  - Benchmarking / Multiskills program / Energy management / Data Driven Maintenance
- Level 4 : Asset Management
  - Maintenance @design / Obsolescence / ISO 55000

### COURSE DURATION:

1 day

### AFTER THIS TRAINING, YOU MAY BE INTERESTED IN:

- MMP-C2-EN: Certified Maintenance Management Professional
- REP-C2-EN: Certified Reliability Engineering Professional
- I-care Maintenance Assessment



# MMP: MAINTENANCE MANAGEMENT PROFESSIONAL CERTIFIED



## AVAILABLE LANGUAGES:



## DESCRIPTION:

This 3-day training program is designed for maintenance managers, supervisors, asset managers, ... willing to strengthen their understanding of maintenance management principles and best practices. Serving as the backbone of this training, I-care dependability model will help participants explore essential concepts and strategies to optimise maintenance processes, reduce downtime, and improve asset performance.

## Objectives:

- Provide participants with a foundation in maintenance management principles.
- Give attendees methods to improve work execution management.
- Enable participants to manage maintenance teams and resources.
- Enable participants to implement

## RECOMMENDED AUDIENCE:

Asset Managers, Maintenance Managers, Planners&Schedulers, Maintenance supervisors and Maintenance engineers, Operations Managers

## YOU WILL LEARN:

- Introduction
- I-care Dependability Model
- Maintenance Management
  - Work Management
  - Shutdown Management
  - Operator Care
  - Spare parts Management
  - Supplier Management
  - Project Engineering & Maintenance
  - Cost Management
  - Safety Management
  - Energy Management
  - Maintenance Organisation
  - People management & transformation program
  - Maintenance Data Management / 4.0
  - Computerized Maintenance Management System (CMMS)
  - Performance Management
  - Asset Management certification according to ISO 55000
- Elements of Reliability Engineering
  - Criticality Analysis
  - Condition Based Maintenance (CBM) technologies
  - Failure Mode, Effect & Criticality Analysis (FMECA)
  - Precision maintenance

MMP-C2-EN



## MMP: MAINTENANCE MANAGEMENT PROFESSIONAL CERTIFIED



AVAILABLE LANGUAGES:



### PREREQUISITES:

Prior experience is not required for attending the training course, but 2 years of general industrial experience is required for certification. Certificate of attendance will be delivered in case you have less than 2 years of experience

### COURSE DURATION:

3 days with certification exam provided on the morning of day 4

### AFTER THIS TRAINING, YOU MAY BE INTERESTED IN:

- I-care coaching through practical implementation of I-care dependability model blocks
- REP-C2-EN: Certified Reliability Engineering Professional
- P&S-IN-EN: Effective Maintenance Planning and Scheduling With Business Game I-Plan
- MRO-IN-EN: Spare Parts Management
- MPB-PL-EN: How to develop a failure mode driven Maintenance Plan?



# REP : RELIABILITY ENGINEERING PROFESSIONAL CERTIFIED



AVAILABLE LANGUAGES:



## DESCRIPTION:

This course is a 3-day training designed to provide participants with a solid understanding of the key principles and practices in the field of reliability engineering. Through a combination of theoretical concepts, methods and case studies, participants will gain the knowledge and skills required to ensure Asset reliability and Maintenance department efficiency in various industries.

Objective:

- Provide participants with an understanding of reliability engineering principles and practices.
- Give participants the skills to ensure processes and system reliability and performance.
- Teach participants various methodologies to identify and mitigate failures.
- Encourage a reliability-focused culture within organisations

## RECOMMENDED AUDIENCE:

Reliability Managers and engineers, Maintenance Managers, Maintenance supervisors and Maintenance engineers, Operations engineers, ...

## YOU WILL LEARN:

- Introduction
- I-care Dependability Model
- Transformation Program
  - Define / Convince / Onboard / Deploy
  - Continuous Improvement
- Methods
  - Reliability Data Analysis
  - Asset Catalog and Bill of Material (BOM)
  - Criticality Analysis
  - Condition Based Maintenance (CBM) technologies
  - Failure Mode, Effect & Criticality Analysis (FMECA)
  - Reliability Centered Maintenance (RCM)
  - Preventive Maintenance Evaluation and Optimisation (PME / PMO)
  - Precision maintenance
  - Root Cause Analysis (RCA)
  - Data driven approach (FRACAS; I-mining; data analytics)
- Elements of Maintenance management
  - Work execution Management (WEM)
  - Maintenance Budget and Life Cycle Costing (LCC)
  - KPI and Dashboarding

REP-C2-EN



## REP : RELIABILITY ENGINEERING PROFESSIONAL CERTIFIED



AVAILABLE LANGUAGES:



### PREREQUISITES:

Prior experience is not required for attending the training course, but 2 years of general industrial experience is required for certification. Certificate of attendance will be delivered in case you have less than 2 years of experience

### COURSE DURATION:

3 days with certification exam provided on the morning of day 4

### AFTER THIS TRAINING, YOU MAY BE INTERESTED IN:

- MMP-C2-EN: Certified Maintenance Management Professional
- I-care coaching through practical implementation of some Reliability Engineering methods



## BUSINESS GAMES I-PLAN & I-BUILD



### AVAILABLE LANGUAGES:



### DESCRIPTION:

This game is part of a Planning & Scheduling training on preparation and management of production shutdown and maintenance interventions.

I-Plan offers the players a simulation of a real shutdown of production that takes all the typical issues into account such as: spare parts management, limitation of resources, imperatives of qualities, problems with subcontractors, planning, etc.

Players will have to organize themselves to manage the workload on a game board that imposes logistical, security and even geographical constraints. The critical path must also be planned and managed throughout the game. I-plan is a race against time because time is money!

### RECOMMENDED AUDIENCE:

This game is useful for Production engineer, Warehouse manager, Shutdown manager, Project manager, Technicians, Maintenance manager and Plan Manager.

### YOU WILL LEARN:

The team receives a series of work orders to execute. Each order has its own requirements in terms of priority, location and resource. The goal is to execute all orders in a minimum of time. During the game, good practice tips are given to make the team as effective as possible.

I-plan has been designed so that players understand the benefits brought by a clear and detailed planning & scheduling process. Finally, everyone's roles and responsibilities becomes more clear to the team.

### PREREQUISITES:

No! The game is designed so that everyone in an organization can participate and understand the importance of everyone's role.

### COURSE DURATION:

1 full day - max 8 participants

BUD-BD-EN



# HOW DO I TRANSLATE A MAINTENANCE PLAN INTO A REALISTIC MAINTENANCE BUDGET?



AVAILABLE LANGUAGES:



## DESCRIPTION:

This one-day course covers the fundamentals of maintenance budgeting and expense control, with a view to optimizing maintenance activities. Participants will understand the value of applying and integrating the use of a well-established budget and its control in maintenance.

## RECOMMENDED AUDIENCE:

Maintenance managers, budget managers and, in general, anyone recently involved in defining and monitoring a maintenance budget.

## YOU WILL LEARN:

- Introduction
- Definition of a budget
  - What is a budget?
  - Why make a budget? What are the objectives?
  - What are the objectives of maintenance?
  - General situation in companies
- Financial concepts: Learn the language of finance
  - Type and structure of costs
  - Life cycle and TCO (Total Cost of Ownership)
  - Financial flows
  - Financial reporting
  - Maintenance concepts
  - Functional hierarchy
  - Drawing up a maintenance plan: the main stages
  - Importance of the choice of maintenance strategy on the budget
- Level of maturity - What level of detail is expected in a budget?
  - 2 approaches: History-based or Zero Based Budget
  - How to create a budget
  - Budget definition and cost centers
  - Types of expenditure
  - Maintenance categories
  - Progression and synthesis in 4 levels of maturity
- Starting point - Roadmap to building your budget
  - The 5 steps
  - Scope definition
  - Data collection
  - Strategy definition
  - Compile information
  - Validation/communicate with the maintenance team.

## COURSE DURATION:

1 day



## INTRODUCTION TO KPI'S TO LEAD YOU TO BEST PRACTICES



### AVAILABLE LANGUAGES:



### DESCRIPTION:

Whether you're just starting out or you have a fully developed maintenance program, seeing any sort of growth and success can't happen without understanding key performance indicators. "In its simplest form, a KPI is a type of performance measurement that helps you understand how your organization or department is performing. A good KPI should act as a compass, helping you and your team understand whether you're taking the right path toward your strategic goals."

### RECOMMENDED AUDIENCE:

- Operation managers
- Maintenance managers
- Teamleaders
- Continuous improvement coaches
- Reliability and maintenance engineers

### YOU WILL LEARN:

In this training, we'll help you understand KPI development so you can prove the value of maintenance in your organization. You will receive a full set of useful KPIs and you will understand when and why you should use them.

If you don't know your KPIs, you can't know if your effort is getting a positive ROI, and that's what leaders use to gauge whether your maintenance program should receive more or less investment. Key performance indicators are absolutely necessary for every maintenance manager.

### Table of Content

- Introduction
- Why using KPI
  - As a way to report actual situation
  - As a way to induce change
- Balance Score Card
  - Mission & Vision (Focus on Results)
  - The Four quadrants
  - Leading and Lagging KPI
- Characteristics of a KPI
- Lagging KPI
  - maintenance costs
  - asset performances
  - capital needs



## INTRODUCTION TO KPI'S TO LEAD YOU TO BEST PRACTICES



AVAILABLE LANGUAGES:



- compliance
- Leading KPI
  - Work Execution Management (WEM)
  - Defect Elimination Process
  - Spare Parts Management
  - Training & Skills
  - QESH
  - Reliability Program
- Reporting & Dashboarding
  - Good practices
  - Tools to help building a dashboard (pros and cons)
- Next steps

**COURSE DURATION:**

1 day



# SPARE PARTS MANAGEMENT



## AVAILABLE LANGUAGES:



### DESCRIPTION:

Optimising the management of spare parts is a key performance driver for maintenance activities. On the one hand, the return to service of installations after failure, and therefore their availability, depends directly on the availability of the parts that make them up.

Secondly, these parts represent a major item in the maintenance budget, both in terms of purchasing and logistics costs (transport, storage, handling). This is why we are offering this 2-day training course on the fundamentals of spare parts management.

### RECOMMENDED AUDIENCE:

This course is aimed at managers, maintenance managers, technical shop managers, those responsible for spare parts management and strategy, and in general anyone who wants to optimise their shop and spare parts management.

### YOU WILL LEARN:

#### 1. Introduction

- A few definitions
- The different types of stock in a company
- Important characteristics of spare parts stock
- The 4 key components of the management model

#### 2. Initiating and placing stock

- Deciding what to stock
- Critical parts - Definition and stocking strategy
- Reorder point and purchase quantity - How to determine them
- Why standardise
- How to manage investment parts

#### 3. Managing and optimising stock

- Warehouse management - best practices
- Information system
- Managing transactions - Origin of errors and the human factor
- Inventories - The principles
- Managing repairables - Impact on stock management
- Kitting - Principle and added value
- Optimisation - A pragmatic approach

#### 4. Managing obsolescence and disposal

- Sources of obsolescence and impact on stock management

MRO-IN-EN



## SPARE PARTS MANAGEMENT



AVAILABLE LANGUAGES:



- How to manage end-of-life: Last purchase and Documentation
- Disposal of surplus - possible strategies

### 5. Defining the management system

- Drawing up processes and procedures
- Measuring performance

**COURSE DURATION:**

2 days



## ROUTINE EQUIPMENT CARE (AUTONOMOUS MAINTENANCE)



### AVAILABLE LANGUAGES:



### DESCRIPTION:

Routine Equipment Care (REC) also known as “Autonomous maintenance” is key in the deployment of an asset management strategy. During this training, the organization will be developing a common understanding of the Routine Equipment Care (REC) process, as well as taking critical decisions that will support the successful foundation of the REC process.

The seminar is given only in-company. Autonomous maintenance is seen as a critical contributor of Total Productive maintenance (TPM). TPM aims at an improved collaboration between production, maintenance and engineering. The impact of TPM can be seen in a structural increase of your OEE - Overall Equipment Effectiveness -.

### RECOMMENDED AUDIENCE:

This seminar is aimed at decision takers such as:

- Senior Managers
- Reliability Leaders
- Operations and Maintenance Supervisors
- Business Process Manager

### YOU WILL LEARN:

- The place of Routine Equipment Care (REC) within the concept of asset management
- What is REC? And what is it not ...
- Defining responsibilities and roles
- The use of deviation labels, 5S
- The distinction between deviations and failures
- The how and why of inspection standards
- What are visual controls and how do they make Routine Equipment Care more effective?
- The use of an Routine Equipment Care board
- How to prepare “One Point Lessons”
- 5 why and his role within Routine Equipment Care
- REC audit
- Which KPIs can you use as a driving force.
- Make a REC board and use it as a driving force for the REC process

### COURSE DURATION:

1 day



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