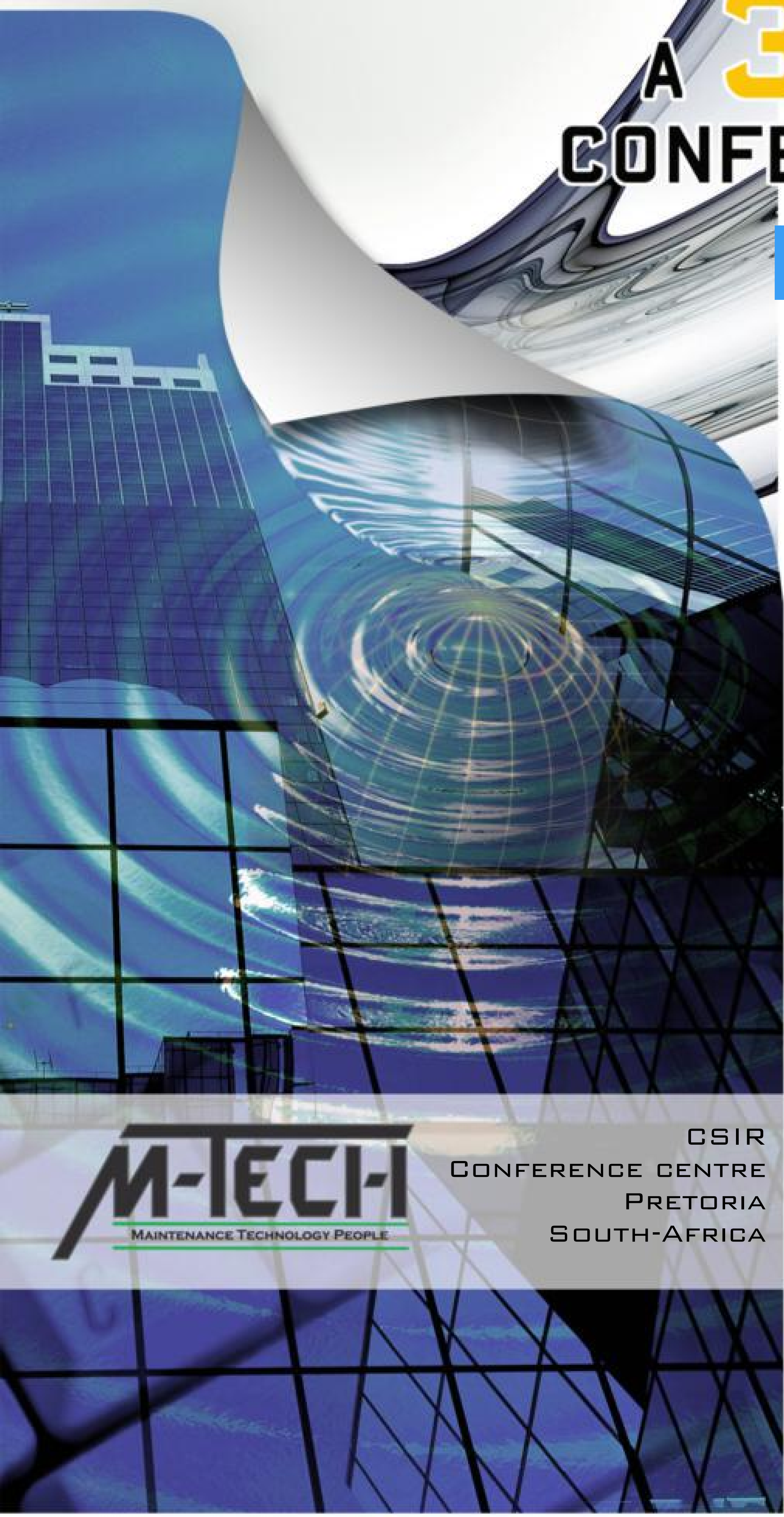
13-15 August 2013

A 3 DAY CONFERENCE



GUEST SPEAKERS

Dr Basim Al-Najjar
Professor of Terotechnology, Linnaeus University and CEO of E-maintenance in Sweden AB.

Dr Wolfgang Breymann
Professor of Financial Mathematics, Zurich University of Applied Sciences, Switzerland.

Dr Jasper Coetzee
Managing Director M-Tech.

Dr Richard Dwight
Professor of Asset Management, University of Wollongong, Australia.

Karlwim Heese
Business Improvement Manager, Saldanha Steel, ArcelorMittal.

Dr Stephan Heyns
Head of Dynamic Systems Group, University of Pretoria.

Johan Janse van Rensburg
Factory Manager, Sezela Mill, Illovo Sugar.

Jannie Mostert
Mechanical Plant Engineer, Hernic Ferrochrome.

Jan Myburg
Consultant, Integrated Asset Management, e-Logics.

Roald Rodseth
Managing Director, Radiant Operations International.

Dr Albert H.C. Tsang
Department of Industrial and Systems Engineering, Hong Kong Polytechnic University.

Christo van der Walt
CEO, Engineering Dynamics Group of Companies.

Dr Ali Zuashkiani
Director, Centre for Maintenance Optimization and Reliability Engineering (C-MORE), University of Toronto.

WORLD TRENDS IN MAINTENANCE ENGINEERING

Why you should attend

One if the most important features of a world class organisation is that it keeps up with new developments in it's field. This World Trends in Maintenance Engineering conference is aimed at keeping the maintenance fraternity up to date with new developments in the field of Maintenance Engineering, in the larger context of physical asset management.

This three-day conference will ensure that you are updated in all the main areas of Maintenance Engineering by listening to papers by world leading researchers and practitioners. You'll be able to set new goals, benchmark against world class operations and optimise your organisation's maintenance effectiveness from the information gained.

You'll be able to listen to papers in areas such as:

- ☐ Life Cycle Management
- ☐ Vibration based condition monitoring
- ☐ Autonomous Maintenance
- ☐ Maintenance Engineering Audits
- ☐ Substantiation of Maintenance budgets
- ☐ Sustainability in asset care
- ☐ Asset management in the Public Sector
- ☐ Laser alignment
- ☐ Maintenance contribution in company profit
- ☐ Evidence based Asset Management

Five of the speakers are members of the Foundation for Research in Maintenance (IFRIM), an organisation linking together researchers in this very important field.

About the speakers

Basim Al-Najjar

Basim Al-Najjar is Professor of Terotechnology and Chair for the Centre for Cost-Effective Industrial Asset Management, department of Terotechnology, School of Engineering, Linnaes University, Sweden. He is also CEO of E-maintenance Sweden AB. He obtained his Ph.D in production management, Lund University, Sweden.His main research area is Terotechnology, which comprises a combination of management, financial, engineering and other practices applied to physical assets in pursuit of economic life cycle costs. It covers maintenance management, optimisation, CM, CBM and its impact on the plant business. He has about 30 years experience in teaching and research mainly in industrial asset management, cost-effectiveness, CBM, problem shooting using vibration spectral analysis, maintenance modelling and optimisation. He is a member of the Swedish board/Swedish Maintenance Society, International Network for Industrial Diagnostics, European Research Network on Strategic Engineering Asset Management, Information Engineering Network on Strategic Engineering Asset Management , Information Engineering Centre (IEC), ISEAM (International Society of Engineering Asset management), and IFRIM (International Foundation for research in Maintenance)

Wolfgang Breymann

Wolfgang Breymann is professor at the Institute of Data Analysis and Process Design (IDP) at Zurich University of Applied Sciences. After PhD and Habilitation in Physics he switched to financial market research. He was a research fellow with Olsen & Associates from 1998 to 2001 and a senior scientist at RiskLab, ETH Zurich from 2001-2004. During these years he directed empirical financial market research and the development of applications for risk management, portfolio optimisation and algorithmic trading models. In 2004 Wolfgang Breymann joined IDP, which he shaped by developing the research activities in financial markets and risk management. At present he pursues the goal of putting the financial risk management methods to use in the non-financial sector, with application (among others) to maintenance management and energy systems. Wolfgang Breymann is (co-)author of over 40 refereed papers and co-author of the book "Unified Financial Analysis". He has given many invited talks at universities and conferences all over the world.

Jasper Coetzee

Jasper L. Coetzee, Pr.Eng., Ph.D., M.Eng. (Industrial), B.Sc. (Eng.) (Mechanical), B.Com., G.C.C. (Mines and Works), G.C.C. (Factories), S.A.I.I.E., I.C.M.E.E., S.A.M.A., I.F.R.I.M., M.E.S.A., Akad.SA., has been actively involved in the maintenance industry for the last 35 years. His contribution to maintenance was acknowledged in 2005, when he received the individual President's Award for Excellence in Maintenance from the Southern African Maintenance Association (SAMA). He started his career in maintenance as apprentice (Millwright). After qualifying he studied in Mechanical Engineering. He practiced maintenance in industry at Iscor's Thabazimbi Iron ore Mine as Resident Engineer, Sasol's Sigma Colliery as resident engineer, and Sosal One as Manager, Mechanical Department. This was followed by a two year secondment to Sasol's Group Information services to develop a group strategy for Maintenance Information Systems. In 1987 Dr Coetzee left Sasol to establish a maintenance consulting practice. The main interest of his consulting work lies in the strategic management of maintenance, but he is also well known for his work in reliability and failure analysis. He is managing director of both M-Tech Consulting Engineers (Pty) Ltd and Maintenance Publishers (Pty) Ltd. M-Tech is involved in maintenance knowledge [redacted] sugar industries. He has [redacted] various levels in the [redacted] Maintenance Engineering [redacted]

[redacted]

[redacted] is [redacted] Plant [redacted] of Hernic [redacted] and [redacted] for the [redacted] implementation and [redacted] management [redacted] his career as [redacted] projects engineer at [redacted] He was plant manager [redacted] before he [redacted] entrepreneurial world [redacted] brother did pioneering [redacted] and telemetric [redacted] irrigation, feeding [redacted] scale [redacted] in [redacted]

[redacted] the [redacted]

[redacted] Engineer with a [redacted]

Workshop Topics.

Workshop 1: Evidence Based Asset Management – Ali Zuashkiani

With the widespread adoption of computerised data collecting systems such as SAP, Maximo, INFOR, etc., companies have become data rich but not necessarily information rich. At the same time, decisions related to company assets are becoming more and more important as they have a significant effect on a company's productivity, safety, and environmental compliance and as a result they affect the company's survival. This is especially true in asset intensive industries such as Petrochemical, Mining, and Electricity Generation.Executives are consequently not comfortable any more to leave such decisions to intuition and qualitative reasoning. They are looking for what is called evidence based reasoning. Fortunately there exists a plethora of scientifically sound techniques/models that form what is becoming to be known globally as Evidence Based Asset Management (EBAM). EBAM consists of a powerful selection of tools that can create significant value in a relative short period of time and with little effort when compared to the value produced. However, there are some challenges. The availability of the required quality and quantity of data is the main issue. This issue cannot be solved permanently without some changes, which must be managed well to succeed. The workshop will introduce EBAM and its application in industry, using several real case studies.

Workshop objectives

Participants will be able to find the answer to the following questions:

- ☐ What is the best time to perform a preventive maintenance/ replacement?
- ☐ What is the economic life of an asset?
- ☐ When is the best time to replace an existing asset?
- ☐ How to make optimised Condition Based Maintenance Decisions?
- ☐ What is the right frequency for conducting inspections?
- ☐ What is the best frequency for the functional testing of safety/protective devices?
- ☐ When is the best time to switch to more technologically advanced equipment?
- ☐ How to make sound repair vs. replace decisions?
- ☐ What are the right quantities to hold in stock of expensive spare parts?

Workshop Content

the rise of what is known as Evidence Based Asset Management (EBAM) implies that hunches, rules-of-thumb, intuition, and years of experience don't mean as much as we tend to attach to it. Managing physical assets appropriately creates competitive advantage for asset intensive companies (e.g. petrochemical, mining, utilities, manufacturing).Decisions that cost companies huge amounts of money have to be based on evidence and sound logic/scientific methods, such as form the core of EBAM. EBAM is thus becoming a "must" rather than a choice. Executives, shareholders, top management, and asset managers need evidence based on data and scientific facts before making decisions that requires millions of rands of investment and/or decisions that might create significant risk in terms of money and safety/environmental hazards. The workshop demonstrates many real world examples of cases conducted in industries around the globe.

Who should attend

Plant Managers, Maintenance and Operation Managers and Supervisors, Planners and Schedulers, Material Management personnel, and Reliability Engineers.

Workshop 2: E-maintenance Decision Support system (eMDSS) to convert loss in productivity into profit – Basim Al-Najjar

The unique software system, eMDSS ™ is based on new theories and tools. It aims to increase production profit through cost-effective maintenance, so to assess the economic impact of various maintenance tasks, and the maintenance contribution to company profit. The system does not demand intensive data. It utilises already existing data, and does not replace the existing maintenance system. It rather supplements the existing system by adding new functions that had previously not existed or have not been available. Applying CBM, the level of the observed CM parameter, e.g. vibration, is considered significant when its value exceeds a warning level. At that level, it is necessary to distinguish whether the increment is representing the real deterioration or not. It is also necessary to get more information describing closely the condition of the component/equipment in question before making any maintenance decision. Thus to enhance the accuracy of maintenance decisions and its cost-effectiveness needs more than the vibration trend offers. For example it is necessary to know:

1. The predicted vibration level at, for example, the next planned measuring moment or stoppage.
2. What the assessment of the residual time and probability of failure is. This is especially so when the production manager needs to assure continuous production for fulfilling the delivery schedule.

Detecting problems in equipment demands identifying cost-effective solutions/ maintenance actions. In many cases, alternative maintenance actions are all technically suitable but not necessarily demanding equal investments and are not of similar cost-effectiveness. It would more convenient if it is possible to simulate some relevant alternative maintenance solutions and select the most cost-effective. It is always preferable to follow up, control and assess the impact of investments/ solutions, and also to assess the losses in production due to unplanned stoppages and disturbances as well as to assess maintenance's contribution in adding more value to the company profit. This is why the following functions are necessary:

1. Assessment of economic losses in production due to unplanned stoppages and disturbances.

2. Identifying and prioritising problem areas and basic causes behind losses in production time.

3. Assessment of the profit/losses due to efficient/inefficient maintenance.

4. Identifying and follow up the best maintenance investment.

Workshop 3: RFID Enabled Asset Tracking / Condition Monitoring Systems - Albert Tsang

Although Radio Frequency Identification (RFID) technology is used fairly widely for inventory tracking, its use in maintenance is relatively scarce. Paradoxically, there is a huge potential for the use of this technology to improve maintenance control. This workshop will introduce the basic components of RFID enabled asset tracking and condition monitoring systems. It will also discuss the pros and cons of RFID as compared to the bar code identification technology. Application examples of such systems in construction, manufacturing, transportation, logistics, and healthcare industries will be reviewed. To address the challenges of system implementation, guidelines and a road map for system deployment and tools for performance evaluation will also be presented.

Who should attend

Maintenance Managers, Maintenance Engineers, and Reliability Engineers.

Workshop 4: Eradicating failure through creative thinking - Jasper L. Coetzee

Maintenance Practitioners are exposed to a work environment, which is inundated with problem situations that must be dealt with. These situations include problems emanating from operational problems, failure-related problems, design problems, purchasing problems, stock-keeping problems and personnel problems. Two specific problem areas of high importance are Failure Cause Analysis and Fault Finding in Maintained Systems. The typical Maintenance Practitioner is however not equipped for handling these, sometimes complex, problem situations. This often leads to sub-optimal decisions, wrong designs (especially in the case of modifications), wrong solutions to persistent failure situations, and severe negative effects when plans do not work out as they should. This workshop is aimed at introducing the Maintenance Practitioner to a process that deals effectively with these situations.

Workshop Content

- ☐ Whole Brain Thinking and the different creative thinking modes
- ☐ The problem solving process
- ☐ Defining the problem
- ☐ Finding the Root Cause
- ☐ Seeking for a solution
- ☐ Implementing the solution

Who should attend

All Maintenance Practitioners who needs to get to grips with repetitive failure situations.

Registration details

1. Complete registration form and fax or email to M-Tech Consulting Engineers (Pty) Ltd, attention Manus de Wet (manus.dewet@m-tech.co.za) or Hendrik Keller (hendrik.keller@m-tech.co.za) Please note there are limited seats available.
2. Please remember to indicate workshop choice on registration form.
3. Tax invoices will be issued with each booking to the parent company (care of the individual identified on the registration form).
4. On receipt of invoice, pay required fee (R9 500 + VAT) per delegate into the M-Tech bank account and send proof of payment via email or fax. For discount rates see 12 below.
5. Bank details:
   Standard Bank Vanderbijlpark
   Account name - M-Tech Consulting Engineers (Pty) Ltd
   Account number - 420 778 934
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6. Acknowledgment of your enrollment will be sent as soon as both form and payment have been received.
7. Accommodation details near the CSIR Conference Centre see http://www.wheretostay.co.za/g/pretoria/accommodation/pretoriaeast.php .
8. All inquiries should be directed to Manus de Wet, manus.dewet@m-tech.co.za
9. The conference fee includes conference notes (on removable computer media) , refreshments, lunches and cocktails.
10. Please note that M-Tech Consulting Engineers (Pty) Ltd reserves the right to use alternative speakers if necessary by unforeseen circumstances as well as to cancel the conference (with full repayment) on lack of interest.
11. Cancellations without penalty (if in writing) will be accepted up to 15 working days prior to the conference. Thereafter a 30% cancellation fee will be payable on written cancellations received prior to the conference. Delegates that do not cancel in writing will be liable to pay the full conference fee.
12. Early bird discount 10% (registration before 1 July 2013). Discount for groups from the same company five or more 15%.

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Synopsis of Conference Topics

Albert H.C. Tsang

Using RFID in the mining industry: current applications and future research directions

Applications of Radio Frequency Identification (RFID) technology in supply chains and manufacturing operations that reduced operating costs and enhanced operational effectiveness have been reported extensively in the literature. However, publications on applications of RFID in the mining industry are relatively sparse. Since mining operations typically involve hazardous work performed in harsh terrains, RFID technology has the potential to bring significant benefits to mining operations. These benefits include preventing workers from using unauthorized equipment, determining miners' locations, tracking expensive assets and emergency equipment, as well as enhancing safety performance and boosting productivity. This paper provides a primer on RFID technology, to be followed by a literature review on current RFID applications in mining industry. Key issues and challenges of implementing RFID solutions in mining environments are discussed and the related future research directions are proposed.

Ali Zuashkiani

Optimum replacement age for underground mains.

Life Cycle Costing (LCC) is gaining lots of popularity as its role in making long term optimal decisions is understood by many organizations. More managers are understanding that the cheapest acquisition costs rarely coincide with least expensive buy in the long run. LCC management provides huge saving potentials for asset managers. There are several LCC models including those which calculate the optimum replacement age of assets such as mobile fleets. However, these are not suitable for finding the optimum replacement age for linear assets such as pipe lines. Linear assets have little, if any, regularly ongoing LCC costs, while there are sometimes significant risks associated with their failures. Risk can thus be harnessed to make replacement decisions for such assets. On the one hand, the probability of failure of an underground gas main can be influenced by several factors, such as the coating of the pipe, its age, the type of soil, etc. Likewise, the consequence of a leak depends on many factors such as the pressure class, and the vicinity to populated areas. This paper is based on a project conducted for one of the largest gas distribution companies in North America.

Basim Al-Najjar

A model for the accurate assessment of the future state of equipment - a case study

When using CM technology for assessing the condition of equipment, the accuracy of the assessment of the condition of a significant component has big technical and economic impact on the output of the machine, the production process and consequently company profitability and competitiveness. Higher accuracy in assessing the condition of a component yields a higher probability of avoiding failures and properly planning maintenance actions for low costs. In this paper, techniques for assessing the state of a significant component using both deterministic and probabilistic approaches are considered. Techniques for predicting the vibration level at the next planned measuring opportunity/stoppage, assessing the probability of failure of a significant component and its remaining life are introduced, discussed, computerised and tested. The major result achieved is the development of a model for more accurate assessment of the condition of a component/equipment through intensively utilising technical data and applying both deterministic and probabilistic approaches. The main conclusion that can be drawn from the case study is that it is possible by applying the model to enhance the accuracy of the assessment of the condition of a significant component/equipment and consequently improve the maintenance decision made.

Basim Al-Najjar

Increasing production profit by more effective maintenance using MDSS/MainSave - a case study

Manufacturing industries realise the importance of monitoring production and maintenance processes using economic and technical key indicators (performance measures). These indicators establish a bridge between the operational level (productivity, efficiency, quality, availability and production cost) and the strategic level (company profit, competitiveness). They are also important to ensure that maintenance plays its role in ensuring sustainable manufacturing. In the past the survival of manufacturing companies was mainly driven by how much a company was able to push into the market. This situation has changed and today's strategies imply cost minimisation, quality improvement, differentiation and the ability to use available resources in a cost-effective way. To reduce losses it is necessary to continuously improve and assess the impact of maintenance on production performance. Deviations in the condition of machines should be acted on before it is too late, so as to increase company profit and consequently enhance its competitiveness. A theoretical model and software module have been developed for mapping, monitoring, analysis, follow up and assessing maintenance's contribution to company profit. This model has been tested at Fiat, CRF in Italy and couple of Swedish companies, with excellent results.

Christo van der Walt

Laser alignment – more than just shaft alignment!

Traditionally, mechanical artisans used laser alignment tools for shaft alignment only. Additional factors leading to alignment problems were ignored because of lack of knowledge and training. The addition of geometric alignment skills can assist the artisan to offer more solutions not only in shaft alignment, but also in the machine tool and manufacturing areas of the plant. Practical examples are provided.

Jan Myburg

Asset management in the public sector as key requisite for a prosperous future

The replacement value of fixed assets in the Public Sector amounts to roughly R 1 800 billion. Concerns are voiced that capital, otherwise intended for expanding service delivery, will have to be used to compensate for the lack of proper maintenance. This presentation suggests that the underlying cause for the maintenance shortfall is insufficient understanding of the integrated nature of maintenance as key to sustainable, affordable service delivery. In the Public Sector in particular, a "common brain" together with a common body of knowledge is a high-priority requirement. A service-delivery-centred framework for a common body of asset management and maintenance knowledge is proposed.

Jan L Mostert

Exploiting the latent systemic abilities of the human asset to achieve long term sustainability in asset care

The people component in the maintenance strategy is often neglected in favour of the hard core components of maintenance. The human asset is the main role player in determining the success and sustainability of an asset care programme. Knowledge and skills, attitude and aptitude, roles and responsibilities, passion and enthusiasm amongst other human attributes can make or break the asset care programme. The unexploited latent systemic abilities of maintenance people lead to inefficiencies and needs to be exploited and developed systematically towards predetermined parameters and managed and directed through a system of procedures, standards and systems. Growing a culture of sustainable asset care is not a process but a journey whereby people, systems and asset management develop together through maturity levels over time. The speed, success and sustainability of this development journey is determined by factors such as the model utilised, the quality and knowledge of the facilitators, and the ability to exploit the latent abilities of the human asset and capture and integrate it with existing and newly developed procedures, standards and systems.

Johan Jansen van Rensburg

Maintenance Engineering auditing - why?

The purpose of the paper is to answer the question, why is Maintenance Engineering Auditing necessary? The answer to the question will be answered in two parts, in the paper presented. The first answer will provide insight into why maintenance engineering auditing was introduced at Illovo, which processes were followed and what was their outcome. The second reason is based on the practical experience of implementing the audit process, and comprises a recommendation by the author of why and when auditing should be done in order to eliminate problems in maintenance engineering practice. The paper explains the processes used in developing an audit tool, the approach and introduction of the audit process, its use at seven operations, the elements audited, the results obtained and remedial action taken. The paper is of a practical nature and does not delve into the theory of Maintenance Engineering, but rather provides a practical usable approach to measuring and improving the level of maintenance practice.

Karlwim Heese

Autonomous Maintenance

What Maintenance Manager would not like to triple the size of his workforce (without additional labour cost) and multiply the impact of his team? The good news is it can be done through the implementation of an Autonomous Maintenance Program. Autonomous Maintenance has been implemented at the Saldanha Steel Mill with excellent results. This was done as part of the ArcelorMittal World Class Manufacturing (WCM) program which is very similar to the well-known Total Productive Maintenance (TPM) program. This paper discusses the basics of World Class Manufacturing and Autonomous Maintenance, the implementation process and timeline, lessons learned and results from the program as achieved at Saldanha. The intention is to give an overview and show the results that can be obtained.

Karlwim Heese

Energy savings through maintenance

The cost of electricity in South Africa increased nearly tenfold over the last 15 years. It is clear that no business can afford not to focus on energy savings. Maintenance plays a key role in energy savings. This paper will discuss this essential role of maintenance in achieving energy savings. The impact of different initiatives to save energy will be shown. Attendees will get a an overview of how to structure an energy saving program as well a wealth of ideas to implement in their various facilities. This can lead to large savings in electricity and energy bills.

Roald Rodseth

Asset management trends

The following are some significant world-wide trends that are impacting on the world of asset management. Companies are compelled to respond to them in an effective manner.

Outsourcing

Globalisation continues to be an ever increasing force in the age in which we live. This trend is placing more and more pressure on businesses to find ways of becoming competitive. Outsourcing follows a clear trend from the traditional pattern where virtually all asset management was done in-house by the parent company to the other extreme where most, if not all, of the asset management is done by parties external to the host company.

Expertise level

The loss of engineering related expertise appears to be a world-wide phenomenon. This is having an adverse impact on the effectiveness of the asset management function. This trend is particularly serious in South Africa. Ways have to be found to mitigate the negative consequences of this.

The electronic and software revolution

The proliferation of electronic devices and the development of associated software is redefining the way in which asset management is practiced. There are clear advantages to this trend but there are some serious pitfalls to be avoided.

Stephan Heyns

Vibration based condition monitoring in non-stationary operations

While the benefits of vibration based condition monitoring was initially primarily realised in industries where equipment run for long periods, under more or less constant speed and load conditions, there is a growing need for extending the application of vibration based condition monitoring techniques to include machines where the operating conditions fluctuate widely. It remains a significant challenge to analyse vibration data that are generated under such fluctuating operating conditions. This is especially true for situations where relatively little prior knowledge regarding the machine or equipment is available. This paper explores a range of techniques which have been developed at the University of Pretoria to deal with such situations, and introduces the techniques by considering various practical applications.

Wolfgang Breymann

Life Cycle Management of technical systems and integrated financial modelling

The life cycle management of technical systems suffers from the fact that different criteria are typically applied for evaluating and optimising financial and technical command variables. This reflects in a divide between upper management and maintenance management. This results in suboptimal decisions and inefficient use of operational resources. To overcome these limitations and raise life cycle management to a qualitatively new level this divide should be bridged in some way. One way is by means of an integrated valuation method that takes into account both the costs and benefits of the whole life cycle of a technical system. This approach is accepted by both upper management and maintenance management. A conceptual framework integrating concepts developed in the fields of maintenance management and integrated financial analysis is consequently used. A production unit (a plant) is described as an option that gives the owner the right but not the obligation to produce certain goods through operating the plant. To prevent degradation and keep the plant operational maintenance is required. This paper describes quantitative models (together with prototype implementations) and carried out three detailed case studies, one which even demonstrated a cost reduction potential of between 50 and 70%.

Richard Dwight

Asset management in the energy pipeline industry in Australia

A review of asset management systems within the context of energy pipelines systems has been conducted. It covers available methodologies, current asset management systems, opportunities for improvement and research challenges. A particular point of interest is the degree to which consideration of remaining life and the influence of maintenance activities are used to drive the asset management strategy. Asset management within the energy pipeline industry is mostly concerned with integrity assurance. Irrespective of this overriding goal, cost of delivery is also of concern. At any point of the service life the remaining life of the pipeline at an acceptable level of integrity is of central interest. When dealing with remaining service life, specific attention must be given to deterioration of pipelines due to corrosion and other defects. At different life stages there are many factors that affect the remaining service life of pipelines which make its estimation problematic in some situations. Pipeline life prediction is integral with determining optimal inspection intervals and selecting repair or protection actions.

Jasper Coetzee

A method for the substantiation of maintenance budgets

Maintenance budgets are a perpetual problem because the understanding of maintenance people regarding the necessity of maintenance actions are not easily communicated to the general management of the business. This often leads to necessary maintenance being postponed, with the effect that the business loses income due to unnecessary stoppages, low production, and waste. A similar problem of a waste of resources because of a misunderstanding between different departments in large organizations also exists in the financial industry. During the last years this problem has been successfully approached by a methodology called unified financial analysis (UFA). UFA methodology makes it possible to model the whole institution's business in a unified framework and manage the risk and profitability of loans and investments properly. The principles imbedded in the UFA approach are well suited for making the realities of maintenance expenditure versus the benefit of achieving high operational readiness of plant visible to higher management. It can also serve to assist maintenance management in managing the maintenance risk for the entire firm well. This paper explains the structure of a maintenance model describing maintenance budget scenarios such that what-if questions can be answered with ease.

FOR MORE INFO

www.m-tech.co.za

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Conference Programme

Tuesday 13 August

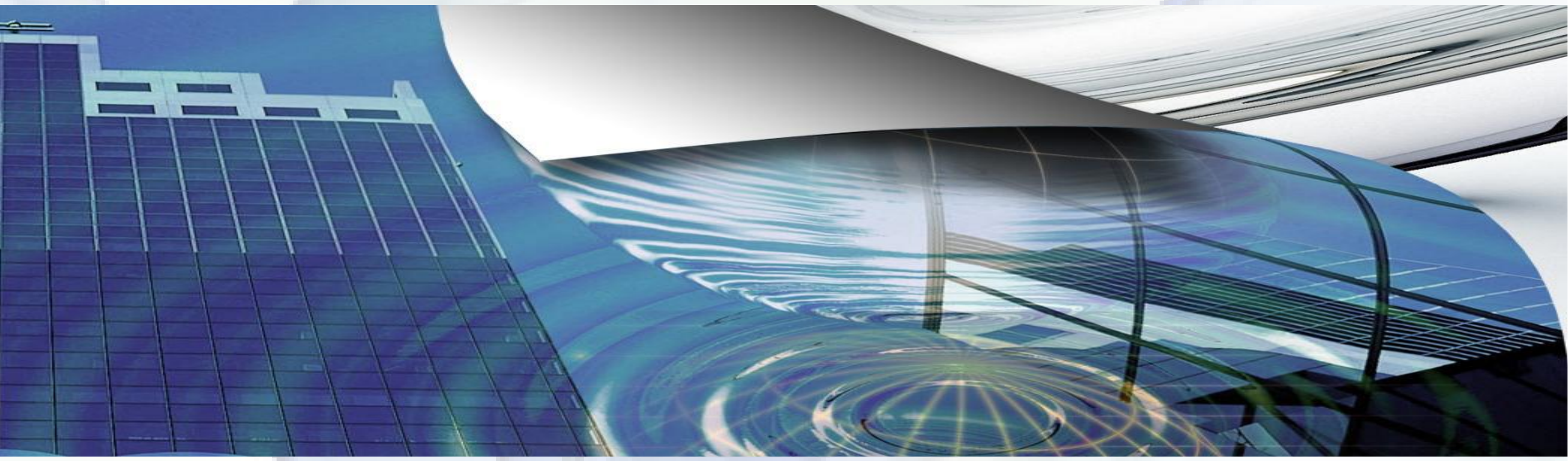
07:30	-	08:30	Registration
08:30	-	09:30	Keynote: Life Cycle Management of Technical Systems and Integrated Financial Modeling - Wolfgang Breymann
09:30	-	10:10	Asset Management in the Energy Pipeline Industry in Australia - Richard Dwight
10:10	-	10:50	Dynamic & Cost-effective Maintenance for Accurate Assessment of the Future State of Equipment - A Case Study Basim Al-Najjar
10:50	-	11:20	Tea
11:20	-	12:00	RFID in Mining Industry: Current Applications and Future Research Directions - Albert Tsang
12:00	-	12:40	Laser Alignment – more than just shaft alignment! - Christo van der Walt
12:40	-	13:40	Lunch
13:40	-	14:20	A method for the substantiation of Maintenance budgets - Jasper Coetzee
14:20	-	15:00	Autonomous Maintenance - Karlwim Heese
15:00	-	15:30	Tea
15:30	-	16:10	Maintenance Engineering Auditing - why? - Johan Jansen van Rensburg
16:10	-	17:10	Panel Discussion: Teaching Maintenance Engineering Panel Members: Stephan Heyns (chair), Wolfgang Breymann, Richard Dwight, Basim Al-Najjar, Albert Tsang, Ali Zuashkiani
17:15	-	18:15	Cocktails

Wednesday 14 August

07:30	-	08:30	Coffee
08:30	-	09:10	Vibration based condition monitoring in non-stationary operations - Stephan Heyns
09:10	-	09:50	Asset Management Trends - Roald Rodseth
09:50	-	10:30	Asset management in the Public Sector as key requisite for a prosperous future - Jan Myburg
10:30	-	11:00	Tea
11:00	-	11:40	Optimum Replacement Age for underground mains - Ali Zuashkiani
11:40	-	12:20	Increasing Production Profit by More Effective Maintenance: Assess and Follow up Maintenance Contribution in Company Profit using MDSS/MainSave - A Case Study - Basim Al-Najjar
12:20	-	13:20	Lunch
13:20	-	14:00	Exploiting the latent systemic abilities of the human asset to achieve long term sustainability in asset care - Jan Mostert
14:00	-	14:40	Energy Saving through Maintenance - Karlwim Heese
14:40	-	15:20	Tea
15:20	-	16:20	Panel Discussion: Ask your questions to our International speakers Panel Members: Richard Dwight (chair), Wolfgang Breymann, Basim Al-Najjar, Albert Tsang, Ali Zuashkiani

Thursday 15 August - Workshops

07:30	-	08:00	Coffee
08:00	-	09:00	Track 1: Evidence Based Asset Management (EBAM) - Ali Zuashkiani Track 2: E-maintenance Decision Support system (eMDSS) to convert loss in productivity into profit - Basim Al-Najjar Track 3: RFID Enabled Asset Tracking / Condition Monitoring Systems - Albert Tsang Track 4: Eradicating failure through creative thinking - Jasper Coetzee
10:00	-	10:30	Tea
10:30	-	13:00	Workshops continue
13:00	-	14:00	Lunch
14:00	-	15:00	Workshops continue
15:00	-	15:30	Tea
15:30	-	16:30	Workshops final sessions



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