



EFNMS Newsletter #9

(September 2019)

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Events

Save the date!

With great pride we announce that the next edition of **EuroMaintenance** will take place from **the 29th to the 31st of March 2021** in Rotterdam, the Netherlands. In a unique collaboration the three-day conference will be combined with MaintenanceNEXT, the Netherlands' largest maintenance exhibition.

Alongside the exhibition participants of EuroMaintenance2021 will be treated for three full days to valuable presentations, workshops, demonstrations and company visits throughout the entire Botlek region.

Showing, Seeing, Hearing, Doing!

[More information >>](#)

2019 – A Strategic Year for A.I.MAN.



This year, A.I.MAN., the Italian Maintenance Association, has been celebrating its 60th anniversary from its foundation. Every activity and every event organized during these months starts from this very important moment: 60 years of Maintenance culture in Italy.

We'd like to underline two events, the first one, **MaintenanceStories**, has taken place last June in Padua: more than 400 attendees for the 17th Edition of the Event addressed to Maintenance and Plant Manager in Italy. It has been the first activity of the year for A.I.MAN. and it's been very successful!

Now everything is going in the direction of **SIMa – Italian Maintenance Summit**, which will take place in Turin at the Lavazza Headquarters on 2–3 October: a brand-new high-tech building will be the venue of the 2nd Edition of the Summit. It will be a two-day event: Maintenance National Congress XXVIII will be held on October 2, while the 3rd Meeting of the Maintenance 4.0 Observatory will take place on October 3.

It is expected to be a strategic moment during which there will be the possibility to hear about Maintenance & Politics, Maintenance & Economy, Maintenance & Society and about all the news in the Maintenance 4.0 field.

A.I.MAN. Associazione Italiana Manutenzione

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Call for speakers



ASSET PERFORMANCE 4.0 CONFERENCE & EXHIBITION

10-12 June 2020 - Antwerp, Belgium

After having organised the very successful Euromaintenance 4.0 Conference, BEMAS has decided to initiate **Asset Performance 4.0**, a leading European Conference & Exhibition on digital transformation in the field of industrial manufacturing and infrastructure management.

The industrial landscape is currently right in the middle of the fourth industrial revolution with new technologies such as the Industrial Internet of Things (IIoT), big data, predictive analytics, machine learning and more being implemented at an ever-increasing pace. The combination of IIoT and predictive analytics offers unseen possibilities for operations, maintenance and asset reliability with more diverse and affordable solutions to monitor and increase asset performance (equipment uptime, energy consumption, quality output...).

The Asset Performance 4.0 Conference & Exhibition offers a unique opportunity to learn how new 4.0 technologies and fundamentals in operations, maintenance and asset management reinforce each other in order to achieve higher equipment reliability and cost performance in asset intensive industries.

Who are we looking for?

Asset Performance 4.0 will focus on disruptive technologies and solutions to increase performance in the field of operations maintenance, reliability, condition monitoring throughout the asset lifecycle. We are looking for speakers who want to showcase their innovations and expertise in this field. We are also looking for managers and engineers working in asset intensive organisations in all types of industries (Oil&Gas, Chemical industry, Manufacturing, Food & Pharma, Infrastructure, ...) willing to talk on how they handle the challenges in maintaining and managing their assets. We are looking forward to hear about experiences with 4.0-solutions currently being implemented in (pilot) sites.

For more information visit www.assetperformance.eu or contact assetperformance@assetperformance.eu.

News

Swedish Maintenance Society – 50th anniversary



30th September 1969, the maintenance society Utek was founded, and in 2012 it was merged with another Swedish maintenance organization and formed the Swedish Maintenance Society. For fifty years, the society has helped the Swedish industry, suppliers of products and services and academies to develop and improve maintenance, reliability and physical asset management.

The society has actively worked both nationally with the member organisations and internationally in cooperation with the EFNMS and participated in several European projects through Leonardo da Vinci and now Erasmus+ programmes.

The vision has changed over time and now it reads "Sweden must, through world-class maintenance, have an internationally competitive industry with high reliability and efficient management of physical assets and digital infrastructure". The essence is however still the same, the equipment must always work when you need it.

The celebration of the 50th anniversary will take place at the Munich Brewery in Stockholm on 3–4 October. It will be two very exciting days of conferences and networking. There will also be an Anniversary Banquet on the evening of 3 October.

Torsten Ekström

Icelandic Asset and Maintenance Society 10-year anniversary

Iceland is a sparsely populated island with 340 thousand inhabitants, about the same size as average town in Europe. Through the centuries, agriculture and fishing have been the foundation of the Icelandic economy. But in the last 50 years Iceland has built up strong power industry by utilizing geothermal energy and hydropower. Renewable energy is now 87% of all energy used in Iceland. Most of this energy goes to asset intense manufacturing where it is used to produce goods such as aluminum and silica products that are exported to Europe.

It is on this foundation that the Icelandic Asset and Maintenance Society (EVS) was founded February 12th, 2019 by the initiative of Bjarni Ísleifsson maintenance consultant. Other founders were Alcoa Fjarðaál, DMM Solutions, HRV Engineering, Landsvirkjun national power company, Norðurál, Reykjavík Energy and Rio Tinto Alcan Iceland.

The goal of the establishment of Icelandic Asset and Maintenance Society has from the beginning been to increase knowledge of asset and maintenance management and to build networks both domestically and internationally through affiliated organizations such as EFNMS. Through the years EVS has given lectures, facilitated courses and stood behind the translation of ISO 55000 into Icelandic, to name a few initiatives.

EVS was accepted as an observing member at EFNMS General Assembly held in Czech Republic in October 2016, to become the 22nd nation to join EFNMS. At the General Assembly in Stockholm this autumn EVS will apply for full membership. EVS looks forward to future collaboration with other European national maintenance societies.

Steinar Ísfeld Ómarsson
Chairman of the Board
Icelandic Asset and Maintenance Society

The results of annual WVIS Branchenmonitor (market study) for industrial services

Since 2010, WVIS has been publishing the market survey and providing information about trends in industrial services.

2018 study shows that the industrial service has adjusted to the new requirements of the industry in terms of digitalization in maintenance and asset management. In Germany, it is still on a continuous growth course. As in the previous year, the industrial service 2018 in Germany achieved average growth of 4.7 percent in a service market with meanwhile sales of more than 20 billion euros.

"The industrial service will accelerate its growth and remain successful. Because the classic maintenance and the new Smart Services offer common potential for new services," says Dr. **Martin G. Eckert**, Managing Member of the Board, WVIS.

The WVIS (German Economic Association for Industrial Services) is a sector-overlapping interest grouping for enterprises of the industrial services sector. The objectives of WVIS are to represent the economic interest of the fast-growing industrial services sector and, in close cooperation with member firms, to achieve quality and sustainability by uniform standards as well as to create a common representative appearance. In Europe, the industrial services branch represents a market volume of approximately 100 billion Euro, and more than 20 billion Euro in Germany.

The WVIS was founded in 2008 and is domiciled in Düsseldorf.

[More information >>](#)

Digital Transformation Of Maintenance – Whitebook is issued

The digital transformation of maintenance has already begun – what are the challenges? Where is the added value? A free whitepaper has been published in German.

Even if the digital transformation of maintenance has long since started – at present, the organizational requirements for the introduction and use of new technologies are not keeping up.

In the Whitepaper **Die digitale Transformation der Instandhaltung**, selected contents are described and prepared for practical use. Read for yourself, using concrete application examples, what the added value of digital asset management is. Thus, digitization does not remain an empty phrase but becomes a lived reality.

[More information >>](#)

Contact:

Lydia Höller from dankl+partner consulting gmbh, www.mcp-dankl.com, a member of MFA – Maintenance and Facility Management Society of Austria.

RAM analysis for Aged equipment during decommissioning phase

Around the globe, many aged equipment impacts on Systems Physical assets performance. Therefore, reliability engineering methods such as RAM analysis are applied to predict the number of future failures, the impact on LCC and the best time to replace such aged equipment.

The usual RAM Analysis methodology encompass seven steps such as scope definition, Lifetime Data Analysis, Modelling, Simulation, criticality analysis sensitivity analysis and Conclusion. Usually such analysis is applied during design phase by using historical data under the assumption of the equipment state as good as new after repair.

However, during decommissioning phase or even before, some equipment/component are aged and such effect need to be taken into account during the lifetime data analysis step by considering the following methods:

- Reliability Growth Analysis;
- General Renewal Model;
- Lifetime data analysis.

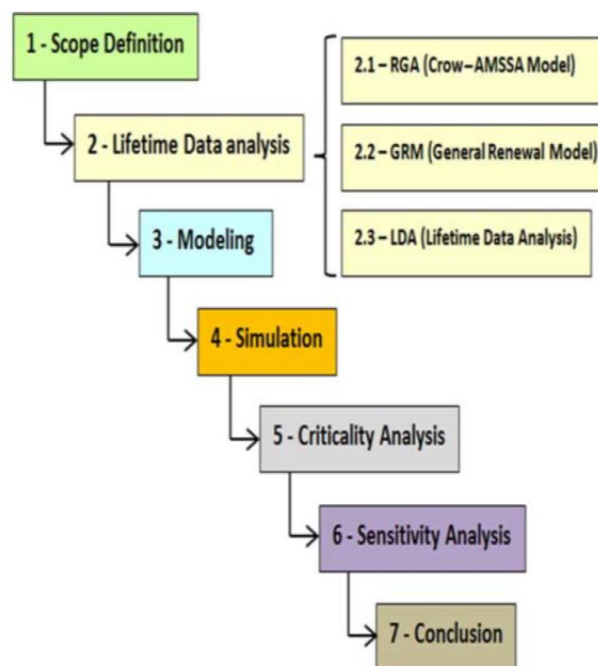


FIGURE 4.117

RAM methodology in the decommissioning phase.

Figure 1. RAM analysis of Aged equipment methodology.

Before the modelling phase (step 3), is very important to be sure that the future failure prediction of each equipment considers the degradation effect. The RGA model enables to predict the next failure time as well as the cumulative number of failures considering the effect of the improvement of the equipment/ component in the state as good as new or better than it. By the other hands, the most common is to predict the future failures considering the operation and maintenance bad effect after each repair, which is worse than the state as good as new and better than the state as bad as old.

However, such methodology performs the prediction for each equipment/component individually. In order to predict the degradation of the whole system considering all the equipment together it's necessary to define the degradation Factor based on the General Renewal Model and input such restoration factor in the RBD during the modelling phase.

In addition, the usual Lifetime Data Analysis need also to be taken into account and the degradation effect must not to be taken into account since will be included as restoration factor in the RBD.

Before, jump to the step 3, it's important to compare the prediction of the RGA and the RBD that considers the restoration factor and calibrate the RBD model.

Table 4.28 RGA × MC

Equipment	10 Years		15 Years		20 Years	
	MC	RGA	MC	RGA	MC	RGA
Tank 1	1		1.99		2	
Pump 2	9.7	8.89	14.09	10.98	18.3	12.76
Pump 3	4.24	3.15	6.44	4.28	8.56	5.28
Pump 4	15.37	12.88	22.6	19.3	29.91	25.27
Pump 5	9.06	8.87	13.23	12.13	17.42	15.24

RGA, reliability growth analysis; MC, Monte Carlo.

After the Lifetime Data analysis, the following steps are the same of the usual RAM analysis.

Please go to the link below to find more details about the 10 steps of the RAM analysis applied to aged equipment during decommissioning phase.

[More information >>](#)

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Best regards,
EFNMS Newsletter Team

With Maintenance Greetings

Cosmas Vamvalis David Merbecks

EFNMS – European Federation of National Maintenance Societies

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