Under the patronage of **HRH Prince Khalid Al-Faisal**
Advisor to the Custodian of the Two Holy Mosques
& Governor of Makkah Region

OMAINTEC
CONFERENCE
EXHIBITION
2025
FM

المؤتمر الدولي الثاني والعشرون لإدارة الأصول والمرافق والصيانة
The 22nd International Asset, Facility & Maintenance
Management Conference

Digitization.. Excellence.. Sustainability

Under the theme: Sustainable Operational Excellence
for Digitalization of Assets, Facility, and Maintenance

CONFERENCE GUIDEBOOK

26-28 January 2025
Ritz-Carlton Hotel in Jeddah, Saudi Arabia

AN INITIATIVE BY

OMAINTEC
المجلس العربي لإدارة الأصول والمرافق والصيانة
Arab Asset, Facility and Maintenance Management Council

EXECUTED BY

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The Specialist Group ● شركة مجموعة المختص

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Day 01: Sunday 26 January 2025

Registration	07:00 – 09:00

3 PARALLEL WORKSHOPS	09:00 – 10:00

1st Workshop | Room 1
How Digitalization Could Change Control Systems in Metro and Railways Systems

2nd Workshop | Room 2
Predicting Failures of Buildings, Roads and Bridges Utilising Artificial Intelligence and Machine Learning

3rd Workshop | Room 3
Fundamental of LCC Digitization

☕ **Coffee Break**

3 PARALLEL WORKSHOPS	10:30 – 11:30

4th Workshop | Room 1
How to Have a Successful Career Path in the Facility and Asset Management Industry

5th Workshop | Room 2
Digital Twin Relays and Test Sets Enables Virtual Relay Testing

6th Workshop | Room 3
Real-Time IoT (Internet of Things) Monitoring in Medical Equipment

Break	11:30 – 11:45

OPENING CEREMONY	HALL A

☕ Coffee Break	12:45 – 13:15

Panel Discussion: International Experiences in Asset, Facility, and Maintenance Management (Experiences from China)	HALL A 13:15 – 14:15

Experiences and Practices in Digitizing Operations and Maintenance Procedures in China (The Guest Country)

🍽 Lunch	14:15 – 15:00

3 PARALLEL WORKSHOPS	15:00 – 16:00

7th Workshop | Room 1
Digital Infrastructure Mapping

8th Workshop | Room 2
Sustainable Predictive Maintenance Applications for Assets and Facilities

9th Workshop | Room 3
Using Digital Technology in Medical Devices within the Standards of Facility Management and Safety FMS in Healthcare

Day 02: Monday 27 January 2025

Registration	07:00 – 09:00

2 PARALLEL SESSIONS 09:00 – 10:15

HALL A – Session 01	HALL B – Session 01
Innovating Asset Management: Embracing Digital Solutions for Enhanced Performance	**Electrical Track: Operational Challenges, Resilience and Grid Security**

☕ Coffee Break	10:15 – 10:25

2 PARALLEL SESSIONS WITH A WORKSHOP 10:25 – 11:25

HALL A – Session 01	HALL B – Session 01
Innovating Asset Management: Embracing Digital Solutions for Enhanced Performance	**Electrical Track: Operational Challenges, Resilience and Grid Security**

☕ Coffee Break	11:25 – 11:35

2 PARALLEL SESSIONS 11:35 - 12:35

HALL A – Session 03	HALL B – Session 03
The Role of IoT in Smart Maintenance Practices	**Electrical Track: Smart Solutions & Advance Monitoring**

🍽 Lunch	12:35 – 13:15

IMA COINCIDE EVENT	**International Maintenance Association Guideline of Digitalization of Assets, Facilities, and Maintenance Management** Re-Shaping the Future of Maintenance	**HALL A** 13:15 – 14:45

Break	14:45 – 15:00

2 PARALLEL SESSIONS WITH A WORKSHOP 15:00 - 16:00

HALL A – Session 04	HALL B – Session 05	10th Workshop	Room 1
Future Trends in Sustainable Transportation Infrastructure	**Innovative Strategie for Water Systems Management**	**Enhancing Infrastructure Asset Management Through Stakeholder Dynamics and Collaboration**

Day 03: Tuesday 28 January 2025

Registration	07:00 – 09:00

2 PARALLEL SESSIONS — 09:00 – 10:15

HALL A – Session 06	HALL B – Session 07
Strategic Asset Planning and Performance Optimization	**Role of Training and Education in Empowering Asset and Facility Management**

☕ Coffee Break	10:15 – 10:25

2 PARALLEL SESSIONS WITH WORKSHOP — 10:25 – 11:25

HALL A – Session 08	HALL B – Session 09	**10:25 – 12:25**
Innovative Asset and Facility Solutions for Enhanced Resilience	**Cybersecurity and Sustainable Innovation in Smart Maintenance**	**11th Workshop	Room 1** **Optimizing Asset Performance: The Strategic Integration of Smart Power Transformers in the Saudi Arabia Electricity Network**

☕ Coffee Break	11:25 – 11:35

2 PARALLEL SESSIONS — 11:35 – 12:45

HALL A – Session 10	HALL B – Session 11
Advancements in Digital Solutions for Predictive Maintenance	**Exploring New Horizons in Maintenance and Design**

Break	12:45 – 13:15

Panel Discussion: **Regional Experiences in Asset, Facility, and Maintenance Management:** Enhancing Maturity Levels in Asset and Facility Management	**HALL A** **13:15 – 14:15**

Transition	14:15 – 14:20

General Assembly Meeting of the Arab Asset, Facility and Maintenance Management Council	**14:20 – 15:00**

CLOSING SESSION	15:00 – 15:30

🍽 Lunch	15:30

Conference Overview

In a rapidly advancing technological world undergoing digital transformation, the significance of efficient asset management, improving facility management, and integrating strategies rooted in artificial intelligence and digital transformation maintenance is underscored. As we shift from the International Operation and Maintenance Conference to the International Asset, Facility, and Maintenance Management Conference, our ongoing expedition delves into novel dimensions within this pivotal sector, illuminating the indispensable roles of adaptation, innovation, and expertise amidst this ever-evolving terrain.

The twenty-second Edition of our conference stands as a testament to pioneering leadership in digital transformation and the utilization of artificial intelligence's potential in the realms of asset management, facilities management, and maintenance practices. Through the embrace of cutting-edge technologies and the pursuit of innovative pathways, we aim to pave the way toward a future where operational excellence and sustainable practices reign supreme.

Amidst revolutionary technological changes such as digitization, sustainability imperatives, and clustering within the dynamic fabric of the modern industry, this conference stands as a beacon of knowledge, a nucleus for collaboration, and a convergence of ideologies, uniting industry frontrunners, experts, and visionaries to partake in dialogues, learning initiatives, and strategic blueprints for a future hallmarked by efficiency, sustainability, and distinction. Join us on this transformative odyssey where ideas flourish, illuminations abound, and routes to triumph in asset management, facilities oversight, and maintenance are revealed.

Conference Topics & Tracks

Asset Management and Maintenance Systems

Buildings and Facility Management

Electrical Systems

Roads and Transportation Systems

Communication Systems,Smart Maintenance and Cybersecurity

Water Systems

Education and Training

Day 01

26 January 2025

Day 01: Sunday 26 January 2025

1st Workshop (Room 1)

**How Digitalization Could Change Control Systems
in Metro and Railways System**

2nd Workshop (Room 2)

**Predicting Failures of Buildings, Roads and Bridges
Utilising Artificial Intelligence and Machine Learning**

3rd Workshop (Room 3)

Fundamental of LCC Digitization

Day 01: Sunday 26 January 2025

1st Workshop:
Predicting Failures of Buildings, Roads and Bridges Utilising Artificial Intelligence and Machine Learning

Room 1
09:00 – 10:00

Eng. Simone Bernasconi

Founder & CEO
Avalle
Switzerland

Biography:

I have been on the road for over 20 years and have held various technical and senior managerial positions in the aviation, railway, government, and mobility sectors. I am an innovator, storyteller, creative engineer, strategist, and responsible leader who knows how to manage crises and ensure business continuity. Digital transformation, change management, the evaluation/implementation of new/emerging technologies, and safety/risk management are some of my areas of expertise. I have lived and worked in dozens of countries on all continents, but I am based in Switzerland. I have a daughter and am happily married.

My mindset: Simple is simply better. Innovation is not only technology. Sharing emotions is communication. A crisis can be an opportunity if you are prepared. Always be ready for the unexpected. Creativity is enrichment. Respect builds longstanding relationships. Mobility is the lifeline of the economy.

A citizen of the world who lives in Uster (Switzerland) since 2018. Father of one daughter, happily married.

Workshop Contents & Objectives

- Personal introduction.
- General introduction to the control systems world.
- Yesterday and today's systems.
- Introduction to control systems (CBCT, ETCS)
- Applicable Regulations and Standards: national and international.
- Learning from Aviation: a short compairason (TCAS, ATC, ATM).
- Tomorrow's systems: a look to the future.
- Active exercises and discussion in groups.

Note: timings can be adapted to suit a 1h30 minute workshop.

The workshop will:

- Showcase new/emerging technologies and possibilities to control.

- Show pro (+) and cons (-) of the selected technologies.
- "Transport" the participants into the next gen control system.
- Discuss opinions, analyze cases and present case studies.

Who Should Attend:

Persons active in any form of maintenance and operations, not only limited to metro, railways or mobility systems. Engineers or manager of technical departments. It is also an opportunity for senior manager to get insights on the topic.

Day 01: Sunday 26 January 2025

3ʳᵈ Workshop:
Predicting Failures of Buildings, Roads and Bridges
Utilising Artificial Intelligence and Machine

Room 2
09:00 – 10:00

Prof. Mufid Samarai

Senior Advisor
Sahara GCC
United Arab Emirates

Biography:

Prof. Mufid Samarai is a senior consultant at Sahara Consultancy and the Jahzin Program, sponsored by Sharjah Holding, and an advisory board member of the Civil Engineering Department at the University of Sharjah. He has served as a professor, dean, and research director at universities in Iraq, Jordan, and the UAE. He also worked as a consultant at the National Center for Construction Labs and Deputy Minister of Housing in Iraq. Prof. Samarai earned his Ph.D. from University College London and has led the rehabilitation of over 100 facilities in Iraq, Jordan, and the UAE. With over 230 publications, two books, and four patents, his research focuses on quality control, non-destructive testing, concrete durability, and sustainability.

Who Should Attend:

This course is tailored for civil engineers, infrastructure managers, construction professionals, and decision-makers involved in the design, assessment, and maintenance of structures. It is beneficial for consultants, government officials, and private-sector engineers focused on utilizing cutting-edge technologies to improve infrastructure longevity and safety.

Workshop Contents & Objectives

Artificial Intelligence (AI) and Machine Learning (ML) transform civil engineering by predicting structural failures in buildings, roads, and bridges. This workshop will delve into the role of AI and ML in concrete technology and science, showcasing how these technologies will address the evaluation, testing, and repair of concrete structures, emphasizing innovative approaches to maintaining their integrity. Real-world case studies will illustrate AI's success in structural health monitoring, including applications in assessing and repairing concrete systems.

- Introduction to AI and ML in Civil Engineering
  - Overview of AI and ML concepts.
  - Historical and emerging applications in infrastructure.
- AI and ML in Concrete Technology and Scienc
  - Role in material optimization and innovation.
- Structural Health Monitoring Using AI
  - Sensor data analysis and historical trends.
  - Early detection of structural deterioration.
- Evaluation, Testing, and Repair of Concrete Structures.
  - AI-driven techniques for structural assessment.
  - Integration of testing data into AI models.
- Advanced Data Collection Techniques for AI Models.
  - Use of IoT sensors and real-time monitoring.
  - Drone-based inspections for comprehensive analysis.
  - Feeding advanced datasets into predictive models.
- Real-world applications and Case Studies.
  - Showcasing AI's role in reducing maintenance costs and preventing failures.
  - Success stories in enhancing sustainability and resilience.

Day 01: Sunday 26 January 2025

3rd Workshop:
Fundamental of LCC Digitization

Room 3
09:00 – 10:00

Dr. Isam Kabbani

Owner & CEO
Al Kabbani Engineering Consulting Office
Saudi Arabia

Biography:

Accomplished and proven leader in Engineering, Construction Management, Operation and Maintenance, Member of many engineering councils, including:

Member of the National Project Support Program Council and Vice Chairman of the Executive Committee for Facilities Management, community deputy Chairman of value management organization in KSA and Owner of Engineering and Project Management Consultancy office.

Professional Experience:
Thirty years of professional experience at General Directorate of Military Works in Ministry of Defense & Aviation, Managed many a Major projects.

Publications:
Participated in numerous scientific conferences and forums and has published many scientific papers.
Authored two books:
- Economics of facilities (Life Cycle Costs)
- Legalization and standardization of Operation & Maintenance

Workshop Contents & Objectives
- Importance of LCC
- Main Life cycle Costs Drivers
- Fundamentals of capturing and digitizing LCC
- LCC Economics
- LCC Methodology and importances

The workshop will:

Demonstrate importance of LCC and the need to capture main cost drivers in a systematic way in order to digitize it to improve outcome reliability.

Who Should Attend:

ALL Engineers in the field of F.M or PM

Day 01: Sunday 26 January 2025

4th Workshop (Room 1)

How to Have a Successful Career Path in The Facility and Asset Management Industry

5th Workshop (Room 2)

Digital Twin Relays and Test Sets Enables Virtual Relay Testing

6th Workshop (Room 3)

Real-Time IoT (Internet of Things) Monitoring in Medical Equipment

Day 01: Sunday 26 January 2025

4ᵗʰ Workshop:
How to Have a Successful Career Path in The Facility and Asset Management Industry

Eng. Ali AlSuwaidi

Vice President
MEFMA
United Arab Emirates

Biography:

Eng. Ali AlSuwaidi is one of the influential leaders of the facilities management and asset management industry in the Middle East. He has been in the industry since the nascent stages and has been tasked with a range of prestigious, mission-critical, high-profile assignments. His valuable volunteering contributed to the growth of the industry in the Middle East and especially GCC countries.

Eng. Ali is one of the FM subject matter experts worldwide and a visionary speaker participating in facility management workshops, conferences, and seminars. Amongst many other important tasks, Ali was the first operation head for the tallest tower in the world, Burj Khalifa.

In addition to being one of the key founders of MEFMA and a prominent figure in the Middle East, he also has a great impact and huge influence globally by being the Vice Chairman in the Global FM Association (GFM) since January 2021 and previously as a board of director since January 2013, along with having a valuable impact as well on various entities in which he held key positions.

Eng. Ali holds MBA from American University of Sharjah and B.S in Electrical Engineering from Toledo, Ohio-USA. He also holds Mini MBA certificate of leadership from INSEAD, and he is a graduate from Dubai Government leadership program in coordination with The Wharton school of Business, USA. Ali Holds international diploma on health, safety and environment management from British Safety council.

Workshop Contents & Objectives

- Introduction to Facility and Asset Management
- The Role of Industry Training
- Professional Certifications and Education
- Applying Training Knowledge in the Workplace
- Essential Success Factors in the Facility Management Industry
- Building Leadership Skills and What does it take to Excel

Who Should Attend:

- Aspiring Facility and Asset Managers
- Current Facility Managers and Team Leaders
- Technical and Operations Staff
- HR, Training & Development teams
- Students

Day 01: Sunday 26 January 2025

5th Workshop:
Digital Twin Relays and Test Sets Enables
Virtual Relay Testing

Room 2
10:30 – 11:30

Eng. Ali Husain

Sales Application Engineer
Protection Segment Leader
Megger Middle East
Bahrain

Biography:

Graduated with honors in Electrical Engineering from the University of Bahrain in 2017. He began his career at Omicron Middle East as an Application Engineer, specializing in protection testing, providing sales support, training, and technical assistance from 2017 to 2019. Following this, Ali joined Megger Middle East as a Sales and Application Engineer, focusing on the power protection segment. In this role, he has been responsible for technical support, training, and sales related to circuit breaker, relay, and instrument transformer testing.

Eng. Andrea Bonetti

Senior Specialist
Power System Protection
and IEC 61850 Applications
Megger Sweden
Sweden

Biography:

Master science electrotechnical engineer from Sapienza University of Rome, Italy with the following work experience:
- 18 years of experience as HV power system protection specialist at HV relay protection manufacturer Hitachi Energy Grid Automation Products (former ABB) in Västerås, Sweden, with IEC 61850 and conventional applications;
- 9 years at Megger in Stockholm, as product manager and technical specialist for relay test equipment and IEC 61850 test set and tools;
- 5 years as consultant in power system protection and IEC 61850 applications.

Andrea:
- holds a patent in the area of IEC 61850 testing tools and algorithms;
- is chair of IEC TC 95 "Measuring relays and protection equipment", member of TC 95/MT 4 and TC 95/WG 2, IEC committees for standardization of protection functions and IEC 61850 application for protection;
- has received the IEC 1906 Award in 2013;
- is guest lecturer at KTH (Royal Institute of Technology, Stockholm) for IEC 61850 for Substation Automation applications, since 2008;
- teacher for IEC 61850 for protection and control applications for the private Swedish University Lernia (Yrkeshögskola) years 2021/2022.

Day 01: Sunday 26 January 2025

Eng. Niclas Wetterstrand

Global Industry Director for Utilities
Megger Sweden
Sweden

Biography:

Niclas has in his whole carrier been working with electrical test equipment for the power sector. He started with Megger Sweden (formerly PROGRAMMA) in 1992 and have been in various roles such as Production Management, Quality, Commercial Marketing, Strategic Marketing, Product Management and Sales. Niclas is currently a Global Industry Director for protection at Megger group and is responsible for the strategic planning and business development of Megger test equipment within relay protection, circuit breaker, instrument transformer and primary testing. Niclas is a Cigré member and is a frequent speaker at international conferences.

Eng. Cedric Harispuru

Product Manager
Senior Key Expert
Siemens
Germany

Biography:

After his graduation from Centrale Supélec and the University of Darmstadt, Cédric Harispuru joined Siemens AG in 2006. He is Product Lifecycle Manager and Senior Key Expert for Engineering Tools in the energy automation. He is responsible for SIPROTEC DigitalTwin, SIPROTEC Tools and IEC 61850 engineering. He is member of IEC TC57 WG10.

Day 01: Sunday 26 January 2025

Workshop Contents & Objectives

The impact of inverter-based generation and upscaling of the electrical grid, require new protection schemes and functions to ensure stable and safe operation. Adequate protection is ensured by relay testing methods that trigger one or more protection schemes and to perform this up to now, physical devices and on-site presence has been necessary, making the process time-consuming and costly. Digital Twin technology now provides a more efficient way to simulate and test protection systems.

This workshop presents a closed-loop virtual relay-testing method using Digital Twin technology where both the digital twin relay and digital twin test equipment operate in a virtual environment, enabling two-way, synchronized feedback between the relay's outputs and the test system's virtual inputs. This synchronization and the high-fidelity simulation that the digital twins provide ensures that simulated time aligns with real-world time conditions, even if the virtual testing speed varies.

This feedback loop enables a thorough evaluation of the relay's behaviour under different fault conditions that reflect real-world scenarios. Engineers can remotely replay, simulate and analyse complex faults without equipment and being on-site, which reduce setup time, resource use, and costs while improving testing accuracy. At a later stage, a subset of the test cases that are designed and validated with the digital twins, can be reused in commissioning and maintenance to ensure properly working hardware and connections as well as confirm that the verified settings are used which reduce commissioning uncertainties and time. The workshop includes test cases demonstrating the current capabilities of Digital Twin technology. The immediate benefits will be discussed, like improved testing efficiency and reliability, with faster tests and more precise relay validation compared to traditional methods. Also indicating that more complex use cases will be achievable as the technology continues to evolve. This virtual platform also supports training requirements, and remote diagnostics, which reduce operational costs.

By utilizing Digital Twin technology, this study highlights the potential to enhance and streamline relay protection testing, driving the development of reliable, cost-effective power grids. The integration of Digital Twins with closed-loop testing sets a new industry standard, offering a future-proof solution for evolving power system protection needs and accelerate grid modernisation.

Day 01: Sunday 26 January 2025

6ᵗʰ Workshop:
Real-Time IoT (Internet of Things) Monitoring in Medical Equipment

Room 2
10:30 – 11:30

Eng. Jihan Aleid

Operation Assistant Manager
Wajdlife Trading Co.
Saudi Arabia

Biography:

As an engineer, I manage the scope, time, cost, quality, and communication of various contract works, ensuring adherence to quality standards and occupational health and safety regulations. I also develop the project execution plan, review the project quality plan, and work closely with the client to meet their expectations and feedback.

I have a master's degree in bioengineering from KFUPM and a bachelor's degree in biomedical engineering from KFU. I am currently pursuing an MBA degree from KFU to enhance my skills in business administration and management. I am passionate about using technology to improve healthcare outcomes and making a positive impact on people's lives through innovative technology solutions. I have experience in troubleshooting, preventive and corrective. I have also obtained multiple certifications in PMP, BLS, OSHA, infection control, and COSHH risk assessment.

Workshop Objectives:

- To identify and assess the perceived benefits of IoT-based real-time monitoring systems.

- To understand the challenges in integrating IoTtechnology in medical equipment.

- To evaluate the impact of IoT integration on the operational efficiency and maintenance costs.

- To assess the perceptions and attitudes of healthcare professionals towards IoT-based monitoring systems.

By the end of this workshop, participants will:

- Understand the perceived benefits and operational advantages of IoT-based real-time monitoring systems in healthcare.
- Recognize the key challenges in integrating IoT into existing healthcare infrastructures and explore practical solutions.
- Analyze how IoT technology enhances operational efficiency and reduces maintenance costs for medical equipment.
- Assess the attitudes and perceptions of healthcare professionals toward IoT adoption, identifying areas for improvement in training and awareness.
- Explore the critical data privacy and security concerns related to IoT and learn strategies to mitigate these risks while fostering trust and promoting adoption in healthcare facilities.

Day 01: Sunday 26 January 2025

Workshop Contents:

- Perceived Benefits of IoT-Based Real-Time Monitoring IoT technology offers substantial benefits for healthcare facilities, including increased equipment uptime, improved patient safety, and data-driven decision-making. This section of the workshop will focus on identifying and assessing the perceived advantages of implementing IoT-based real-time monitoring systems. Participants will engage in discussions on how predictive maintenance, better resource allocation, and enhanced equipment reliability can transform patient care and operational efficiency in healthcare settings. Case studies will demonstrate the positive impacts of IoT adoption in hospitals and clinics.

- Challenges in IoT Integration While IoT presents numerous benefits, healthcare organizations face significant challenges when integrating these systems into existing medical infrastructure. These challenges include high initial costs, compatibility issues, lack of skilled personnel, and resistance to change. This section will provide a detailed analysis of these obstacles, drawing from real-world examples of healthcare facilities that have encountered these issues. Participants will explore potential solutions to overcome these barriers, such as training programs for staff, cost-benefit analyses, and phased implementation strategies.

- Impact on Operational Efficiency and Maintenance Costs One of the key advantages of IoT-enabled devices is their ability to improve operational efficiency and reduce maintenance costs through real-time monitoring and predictive analytics. This segment will evaluate how IoTsystems can optimize equipment performance, decrease downtime, and streamline maintenance processes. Participants will review data from studies showing the cost savings and efficiency gains experienced by healthcare organizations using IoT technology, and discuss the role of data analytics in achieving these outcomes.

- Perceptions and Attitudes of Healthcare Professionals The successful adoption of IoT technology in healthcare depends not only on technical feasibility but also on the perceptions and attitudes of healthcare professionals. This part of the workshop will assess how healthcare workers view IoT-based monitoring systems, their level of awareness, and their willingness to embrace these technologies. By understanding the human element in IoTadoption, participants will be better equipped to address resistance and foster a positive culture around technological innovation in their own organizations.

- Data Security and Privacy Concerns One of the most significant barriers to IoT adoption in healthcare is the concern over data privacy and security. This session will explore how healthcare facilities manage the large volumes of sensitive data generated by IoTdevices and the challenges they face in protecting this information from breaches, unauthorized access, and cyberattacks. Participants will review current data protection regulations, such as GDPR and HIPAA, and examine strategies for mitigating security risks, such as encryption, access control, and network monitoring. The session will also address how these concerns impact the adoption rates of IoT technologies, and

Who Should Attend:

This workshop is ideal for healthcare administrators, medical equipment managers, IT professionals in healthcare, and decision-makers interested in leveraging IoT technology to improve healthcare delivery and operational performance.
By addressing the full scope of benefits, challenges, perceptions, and security concerns, this workshop will equip participants with the knowledge needed to make informed decisions about the implementation and management of IoT systems in healthcare.

Day 01: Sunday 26 January 2025

Panel Discussion:
International Experiences and Expertise in Maintenance
(Experiences from China)

🕐 **13:15 – 14:15**   🖥 **Hall A**

Main Topic:
Experiences and Practices in Digitizing Operations and Maintenance Procedures in China (The Guest Country)

Prof. Baowen Li
Chairman
Huamou Consulting
Technology (shenzhen)
Co. Ltd
China

Prof. Baoqiang Xu
Associate Professor
School of Mechanical
and Electrical Engineering
Guangzhou University
China

Eng. Yuchang Zhang
Independent Advisor
of R&D Program
Beijing Centraltech
Co. Ltd.
China

Eng. Colin Ning
Head of International
Business Development
Yado Monitoring Technology
Co. Ltd.
China

Day 01: Sunday 26 January 2025

Prof. Baowen Li
Chairman
Huamou Consulting Technology (shenzhen) Co. Ltd
China

Biography:

Professor Baowen Li, Chairman of Huamou Consulting Company, is the founder of TnPM management system and an internationally renowned expert in equipment management.
He has been deeply involved in the field of equipment management for over thirty years and was an early promoter of TPM (Total Productive Maintenance) in China, pioneering the unique TnPM management system.

Professor Baowen Li has made significant achievements in the field of equipment management. He is not only the invited vice president of the China Equipment Management Association, but also one of the initiators of the International Maintenance Association(IMA) and serves as the chairman of the China region.

Prof. Baoqiang Xu
Associate Professor
School of Mechanical and Electrical Engineering
Guangzhou University
China

Biography:

Associate Professor at Guangzhou University,
Secretary General of the China Branch of the International Maintenance Association.
Focused on TPM&EAM, and intelligent maintenance, with over 20 years of consulting and information system project experience. Lead the drafting of the national standard 'Equipment Management System-Requirements'.

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Eng. Yuchang Zhang
Independent Advisor of R&D Program
Beijing Centraltech Co. Ltd.
China

Biography:

PhD candidate, SEAS, Harvard University
Independent advisor for the R&D program, CENTRALTECH

Graduated summa cum laude from Worcester Polytechnic Institute in 2019 with a B.S. in Electrical Engineering. Research focused on developing integrated circuits for neuro signal detection, received the 3rd place best paper award at MIT URTC in 2019.

PhD studies in Electrical Engineering at Harvard University in 2020 and is currently a PhD candidate in professor Donhee Ham's research group.
Currently, Research focused on Allegro Microsystems as a mixed-signal IC designer for automotive products.

Eng. Colin Ning
Head of International Business Development
Yado Monitoring Technology Co. Ltd.
China

Biography:

Expert in energy harvesting and switchgear condition monitoring applications, contributor to the PetroChina Guangdong Petrochemical Refinery Complex, a $10 billion greenfield project, overseeing electrical equipment condition monitoring for enhanced operational reliability.

Specializes in driving innovative solutions for predictive maintenance and energy harvesting in industrial applications, with a focus on global market expansion and technology deployment.

Day 01: Sunday 26 January 2025

7th Workshop (Room 1)

Digital Infrastructure Mapping

8th Workshop (Room 2)

Sustainable Predictive Maintenance Applications for Assets and Facilities

9th Workshop (Room 3)

Using Digital Technology in Medical Devices within the Standards of Facility Management and Safety FMS in Healthcare

Day 01: Sunday 26 January 2025

7rd Workshop:
Digital Infrastructure Mapping

Room 1
15:00 – 16:00

Ms. Katherine Pfeil

Head of Sales
Inframappa
United States

Biography:

Katherine has cultivated an outstanding career in the technology sector, earning recognition for her expertise in delivering innovative solutions and building lasting client partnerships. She currently serves as Vice President of Sales at InfraMappa, a software platform that revolutionizes infrastructure management through advanced digital mapping. InfraMappa enables users to map and manage infrastructure assets, such as utilities, by creating comprehensive, interactive digital maps.

Katherine's extensive experience in technology sales and business development has established her as a trusted leader. A recognized expert in solution design, she collaborates with clients to craft strategies that address complex challenges and align with their goals. Passionate about leveraging technology for growth, Katherine's leadership and dedication to data-driven solutions drive innovation and deliver exceptional value.

Who Should Attend:

This workshop is designed for asset managers, facility managers, infrastructure planners, maintenance professionals, city planners, and engineers who are responsible for the oversight, maintenance, and digitalization of infrastructure and facilities. It is also suitable for decision-makers and consultants involved in construction, real estate, and industrial projects, as well as government officials responsible for urban planning and smart city initiatives. Participants should have an interest in utilizing innovative digital tools for improving operational excellence and sustainability in asset management.

Workshop Contents & Objectives

This hands-on workshop will delve into the intricacies of digital infrastructure mapping, an essential tool for managing and optimizing the lifecycle of physical assets in today's digitally transformed environment. Leveraging the powerful capabilities of the InfraMappa platform, participants will explore how cutting-edge technology and Infrastructure Mapping as a Service (IMaaS) can revolutionize asset and facility management. The workshop will cover several phases of the asset lifecycle, including real-time visualization of underground, surface, and overhead infrastructure, and the use of digital twins to facilitate better decision-making, risk mitigation, and maintenance coordination.

Participants will gain practical insights into using **InfraMappa** to improve operational efficiency, reduce risks, optimize resource allocation, and enhance sustainability practices in managing facilities and infrastructure. Through case studies, demonstrations, and interactive exercises, the session will showcase the software's ability to provide precise location intelligence, proactive asset management, and streamlined maintenance operations, resulting in improved budgeting, orecasting, and emergency preparedness.

Key learning outcomes:

- Showcase new/emerging technologies and possibilities to control.
- Show pro (+) and cons (-) of the selected technologies.
- "Transport" the participants into the next gen control system.
- Discuss opinions, analyze cases and present case studies.

Day 01: Sunday 26 January 2025

8ᵗʰ Workshop:
Sustainable Predictive Maintenance Applications for Assets and Facilities

Room 2
15:00 – 16:00

Prof. Hossam Elborombaly

X-head Of Architecture Department
Ain Shams University
Egypt

Biography:

Hossam Borombaly is a distinguished Professor and former Head of the Department of Architecture at Ain Shams University, renowned for his significant contributions to the field of architecture and maintenance engineering. He has been recognized with several prestigious awards, including the Arab Knight Award from the Union of Arab Investors in Egypt in 2020 for his global achievements, and the Distinguished Architect Award by the Canadian Chamber of Commerce in coordination with Smart Vision Egypt, also in 2020.

His remarkable project, the Development of Sayeda Aisha Square, garnered the Bronze Award for the Best Architectural Project in the World in 2019 from the Community Foundation (Livecom. Ability) in Rome, Italy. Borombaly was honored as Engineer of the Year by the Arab Institute for Operation and Maintenance in 2017, receiving the Arab Award for Distinguished Maintenance.

An active member of key professional bodies, he serves as a Board of Trustees member of the Arab Council for Operation and Maintenance (OMAINTEC) and as a Consultant for the International Maintenance Association (IMA) in Lugano, Switzerland. His expertise is sought after as a lecturer in maintenance programs at various Egyptian universities and ministries across the Arab region.

Hossam Borombaly also leads efforts to establish standards for the restoration and maintenance of heritage buildings as the Head of the Specialized Committee in this domain. He is chairing the Egyptian Code Committee for Operation and Maintenance of Public and Heritage Buildings at the Ministry of Housing and is the Head of the Arab Unified Code Committee at the League of Arab States. Additionally, he serves as Rapporteur for the Maintenance and Facilities Management Committee at the Egyptian Engineers Association.

Throughout his career, Borombaly has earned accolades for his design work, including the Second Prize for Best Design for Al-Wardian Mosque in Alexandria in 1981 and the Fourth Prize for Re-planning the Al-Marsa Abu Al-Abbas District in 1982. He is also a trusted consultant for numerous contracting companies specializing in maintenance and operation.

Day 01: Sunday 26 January 2025

Workshop Contents & Objectives

This workshop aims to provide a comprehensive understanding of predictive maintenance applications for assets and facilities. We will discuss how modern technologies and methodologies can be applied to enhance the sustainability and performance of assets. Special attention will be given to architectural, mechanical, electrical, and water systems maintenance, focusing on improving operational efficiency, safety, and reducing downtime.

Objectives:
• Present the latest predictive maintenance techniques for asset management.
• Discuss the best practices in maintaining public and heritage buildings.
• Explore maintenance strategies for water, sewage, electrical, and mechanical systems.
• Provide practical tools and knowledge for improving maintenance operations and asset longevity.

Who Should Attend:

All Engineers Who Are Intersted In This Field.

Day 01: Sunday 26 January 2025

9th Workshop:
Using Digital Technology in Medical Devices within the Standards of Facility Management and Safety FMS in Healthcare

Room 3
15:00 – 16:00

Dr. Ibrahim Andijani

Consultant Biomedical Engineer and Director of Facility
Safety Department
Prince Sultan Military Medical City
Saudi Arabia

Biography:

Dr. Ibrahim Andijani is Consultant Biomedical Engineer and Director of Facility Safety Department at Prince Sultan Military Medical City PSMMC and Head of Biomedical Engineering (Previously). His experience in overseeing the Facility Safety Programs technically and administratively to provide safe, functional, and supportive facilities for patients, families, staff, and visitors. Also, in managing a Department of 42 Bioengineering staff and over 20,000 items of medical equipment. His responsibilities include chairmanship and membership on several professional boards and committees, and he has several professional affiliations.

Eng. Fayad Daraghmeh

General Manager
Steady Solutions
Jordan

Biography:

Eng. Fayad Daraghmeh B.Sc., CE is a registered professional engineer with extensive experience in the medical device industry as well as biomedical engineering research and consultation. He had a distinguished 40 years' career with regional and international corporations. Fayad is currently the general manager of Steady Solutions, a company providing technical services and software solutions to various industries.

He authored numerous papers in clinical engineering topics resulting from his extensive engineering experience and has 5 copyrights in total solutions software programs dedicated to Operation& Maintenance, ERP and HIS used by many sites and various industries in the region.

Day 01: Sunday 26 January 2025

Workshop Contents & Objectives

GENERAL LEARNING OBJECTIVES:
Introduce the participants to the Medical Equipment standards part of Facility Management and Safety FMS standards according to National and International Hospital Accreditation. Also introduce them to the different mechanisms and procedures needed to manage effectively the contribution of medical equipment to contemporary healthcare systems. This program will cover recommended practices for medical equipment management including Medical Equipment Plan, Policy & Procedure, Medical Equipment Inventory & tagging system, Prevertive Maintaining Program, Medical Equipment Recall System.

In the second part of the workshop, we will present how to comply to the roles and regulations highlighted in the first section by introducing the latest technology to remain competitive.

Service managers need to know how digitization will affect and improve asset & facility management process to identify trends and patterns of assets behavior.

In the past, the main objective of the engineering department was to carry out repairs when the asset was not in operation. Today, asset & facility management influences all aspects, efficiency, risk, safety, environment, energy, costs, quality and customer satisfaction.

The technical team generate a large amount of information that exceed the capacity of human analysis. For that an adequate assets & facility digitized management system must take into account the life cycle of each physical asset in all its phases, this is why it is necessary to combine technical and financial indicators with the use of latest technology that present and help to control and analyze the following criteria's by implementing business intelligent dashboard.

- Max, Min and average DT
- CM, PM performance
- MEL, Man power load
- MTBF, MTTR
- Maintenance – V – Equipment cost
- User Errors
- Incidents Related to Equipment
- Misused, Missing
- DT- V – TP
- Due PM failure
- No. of failure per asset, and many more...

Who Should Attend:

Biomedical and clinical Engineering Managers, Supervisors, Engineers and Technicians, Biomedical Technologist, Medical Equipment Specialist, Quality Management Managers, Hospital safety Officers, Facility Management and Safety coordinators, Clinical Managers, Nurses, Administrative and Technical Managers/Directors, others interested like Hospital Directors, Owners, Hospital Designers.

Day 02

27 January 2025

Day 02: Monday 27 January 2025

2 PARALLEL SESSIONS

Keynote Speaker:
Dr. Eng. Franco Santini
Former President of Aiman
Former Chairman of EU CEN
MAINTENANCE 319
Italy

Chairman:
Eng. Mohammed Abu Afifah
Board Member, Arab Asset
Facility and Maintenance
Management Council
(OMAINTEC)
CEO, Conceliar
Jordan

Prof. Adolfo Crespo Marquez
Professor
Universidad De Sevilla
Spain

Eng. Fayad Daraghmeh
General Manager
Steady Solutions
Jordan

Eng. Abdul-basit Sheikh
Project Manager
City Cool
Saudi Arabia

Eng. Yazeed Al-Owaid
Programs Director
Saudi Aramco
Saudi Arabia

Day 02: Monday 27 January 2025

Keynote Speaker:

A New Age: Maintenance for Sustainability
Dr. Eng. Franco Santini
Former President of Aiman
Former Chairman of EU CEN MAINTENANCE 319
Italy

Biography:

- Dr PH Mechanical Engineer, Genova University 31 May1966
- Maintenace Manager-ENI Petrolchemical
- Dow Chemical Site Manager
- Nestlè Technical Director
- Unilever Technical Director
- Harvard IMEDE Executuve Diploma
- Member EFNMS Board 6 Years. Aiman President 10 years
- Chairman EU CEN Technical Committee 310 Maintenance 2008
- 2024 Key notes Speakers in Congresses and Conference-Certified Accredia Maintenance
- Manager Teachers In Maintenance Manager Master Author in Papers in Specialized Magazine
- Consulting in Industrial Company

Abstract:

- The genesis of sustainability and the sinergies with industry 4.0 technologies
- The evolution of maintenance function in the industrial transformation scenario
- The incoming new AGE "Maintenance for Sustainability"
- Maintenance becomes a Protagonist called to implement, maintain and develop sustainability for all the life of physical assets trough appropriate competence, technologies 4.0 and artificial intelligence to contribute to increase the level of sustainability trough the factors ESG= Environment Social and Governance of physical assets, measurable with Esg Rating Indicator.
- In this framework I recomend to implement the digital maintenance technologies 4.0, selecting the most appropriate to achieve an excellent maintenance services, to move from the restore of failures, to prevent failures through preventive maintenance 4.0, with the deployment of Maintenance engineering, criteria and methods.
- It is necessary to carry out a   MANAGEMENT ASSESSMENT of PHYSICAL ASSETS to be digitalized preparing a road map of the appropriate Technologies 4.0   to define a list of critical and more profitable assets in order to optimize the applications of digital transformation.

At last, because the utilization of technologies 4.0 is a fundamental big jump, but the medium term is not enough to maintain the house of an Excellent Maintenance, in the last part of paper I report the other important Pillars well known to go on, to provide the three basic requirements for an Excellent Maintenance: Committment- Consistency-Continuity.

Day 02: Monday 27 January 2025

Chairman:

Eng. Mohammed Abu Afifah
Board Member, Arab Asset
Facility and Maintenance Management Council (OMAINTEC)
CEO, Conceliar
Jordan

Biography:

Civil Engineer Engineer Mohammad Abu Afifa has extensive experience in engineering development, training and capacity building. He is a board member of the Arab Council for Asset, Facilities and Maintenance Management, and the former Secretary General of the Jordanian Engineers Association (JEA). He also served as the General Manager of the Engineers Training Center at JEA. He previously worked in the Ministry of Education and the Jordanian Ministry of Public Works on international projects. He has played a leading role in supporting engineers across the Middle East and Africa and developing their skills and capabilities according to international best practice standards in many disciplines including consulting, engineering education, professional certifications for engineers and professional qualification for engineers. He has also contributed to professional issues related to the engineering profession such as: Public-Private Partnerships (PPP), governance and strategic plans, total quality management, environmental health and safety, supply chain management, asset and facility management, and engineering education reform. For more than (20) years, he represented Jordan in the International Federation of Consulting Engineers (FIDIC). During this period, he supervised the translation of FIDIC standard contracts into Arabic. He was also a project manager for several international engineering publications, including the Engineering Supervision Guide, the Reinforcement Steel Guide for Buildings, the Building Damage Assessment Guide, and Safety Procedures for Post-Disaster Buildings.

Day 02: Monday 27 January 2025

Asset Digitalization Model and Asset Health Management

Prof. Adolfo Crespo Marquez
Professor
Universidad De Sevilla
Spain

Biography:

Adolfo Crespo Márquez is currently Full Professor at the School of Engineering of the University of Seville, and recently Head of the Department of Industrial Management. He holds a Ph.D. with Honors in Industrial Engineering from this same University.

He is included in the Stanford University's list of world top-scientists in 2022 (doi: 10.17632/btchxktzyw.5) and he received the Spanish Maintenance Award from the Spanish Maintenance Association (AEM) in 2020. Prof. Crespo is the author of 8 books and Editor of 5 books with Springer, Aenor, IGI Global and INGEMAN, about maintenance, warranty, supply chain and assets management.

Professor Crespo is Fellow and Director of ISEAM (International Society of Engineering Assets Management), Editor-in-Chief of the Springer Book Series Engineering and Asset Management Review. He also leads the SIM (Sistemas Inteligentes de Mantenimiento) research group related to maintenance and dependability management and has extensively participated in many engineering and consulting projects for different companies.

Abstract:

Despite advancements in technologies like digital twins, asset digitization remains a significant challenge. The core issue lies in accurately and comprehensively determining how assets adapt to the management of complex systems introduced by digitization.

This gap in understanding and executing asset digitization affects the organization of asset-related information. Digital assets are vital components within an interconnected digital ecosystem, not just mere pieces of equipment. Without a clear comprehension of how these assets integrate and function within this digital framework, our decision-making and management capabilities are impaired. This leads to operational inefficiencies, increased costs, and a decline in service quality and infrastructure reliability.

This article aims to tackle this challenge by focusing on asset digitization. It provides a practical example of advancing this field through the integration of various models. This involves defining and categorizing assets based on established standards, assessing asset criticality, and merging IoT-based monitoring models with the Asset Health Index (AHI) model. This integration provides a comprehensive view of asset digitization, addressing different levels of complex asset system management. It facilitates better connections between real-time monitoring and a deeper, long-term understanding of asset conditions and performance. The resulting synergy improves the effectiveness of asset digitization strategies, particularly in critical areas like infrastructure management.

The article presents a concrete example: the digitization of a bridge. This case study demonstrates how these practices positively impact asset management and maintenance during digital transformation, enhancing the safety, efficiency, and reliability of our digital infrastructures.

Day 02: Monday 27 January 2025

Are You Planning for Assets & Facility Management Digitization? Go for Full Solutions

Eng. Fayad Daraghmeh
General Manager
Steady Solutions
Jordan

Biography:

Eng. Fayad Daraghmeh B.Sc., CE is a registered professional engineer with extensive experience in the medical device industry as well as biomedical engineering research and consultation. He had a distinguished 40 years' career with regional and international corporations. Fayad is currently the general manager of Steady Solutions, a company providing technical services and software solutions to various industries.

He authored numerous papers in clinical engineering topics resulting from his extensive engineering experience and has 5 copyrights in total solutions software programs dedicated to Operation& Maintenance, ERP and HIS used by many sites and various industries in the region.

Abstract:

Maintenance teams worldwide are looking for digital solutions to improve efficiency, cost and safety ratings. You can't effectively improve your teams' with only stacks of paper. The solution is to get the software that best fits you. But how to get the right CMMS for your team? We'll cover how to effectively choose and how to showcase real results for your business. CMMS in general, is a software-based solution designed to help organizations efficiently manage and maintain their equipment, assets, services and facilities by automating and optimizing maintenance processes, streamlines procedures, eliminates paper stacks, enhances team communication, and supports managerial decision-making.

There are many reasons to adopt CMMS to make your team work more efficiently together. These days, the primary motivating factors for most companies are to:

Reduce Downtime:
Many operational managers are now under pressure to maintain intense production schedules and reduce asset downtime. The responsibility of managing thousands of assets is increasingly looking toward digital management solutions.

Eliminate Indirect Costs:
Indirect maintenance costs are hidden in the form of reduced asset lifecycles, high energy costs, lost production, late deliveries, inefficient equipment scheduling, and various wasted resources. And direct maintenance costs appear in the form of labor, materials, contracts, and overhead expenses. Good CMMS services solve these by making proactive maintenance a realistic, achievable, and stress-free goal.

Increase Transparency and Accountability:
Another benefit for many organizational leaders using CMMS is increased transparency, emphasizes the areas where departments are already excelling and the areas that need improvement. With CMMS reporting features, leaders can quickly determine, for example, policy compliance by team, which asset cause the most problems, and where there is overspending. Monitor and tracking asset health in an organized manner allows management to fine-tune their strategies toward reducing downtime, cutting costs, and increasing asset longevity.

Unfortunately, many CMMS software providers don't consistently deliver these results, and companies don't always meet their goals. To get the right CMMS go for the one that offer full solutions.

Digitization in Facilities and Maintenance Operations: Modern Trends, Benefits, and Implementation Challenges

Eng. Abdul-basit Sheikh
Project Manager
City Cool
Saudi Arabia

Biography:

With over 12 years of extensive experience in Project Management, Plant, and Facilities Engineering Management, I am a seasoned professional dedicated to delivering exceptional outcomes. Holding certifications as a Project Management Professional (PMP)® and Certified Maintenance & Reliability Professional (CMRP)®, I specialize in leading cross-functional teams and ensuring the highest standards of quality and excellence.

My expertise spans Operations & Maintenance Management across various industries, including District Cooling, Mixed-use High-rise buildings, Data Centers, and Food Processing & Manufacturing. I excel in managing plant and Facilities operations while adhering to regulatory standards, to optimize system performance and ensure continuous operational availability.

I have a proven track record of overseeing diverse projects with proficiency in project planning, budgeting, and execution to drive successful outcomes. Furthermore, I am skilled in enhancing operational processes through continuous improvement methodologies such as Six Sigma and 5S strategies.

My leadership extends to Maintenance Engineering operations with a focus on Facilities and Utilities systems, where I prioritize operational availability and uptime. As a strong leader and team player, I motivate teams to achieve peak performance while aligning with organizational goals.

I have had the privilege of presenting research papers at the 20th & 21st International Operations & Maintenance Conference, contributing to maintenance education and performance metrics discussions.

Abstract:

The integration of digital technologies into facilities and maintenance operations has transformed traditional processes, leveraging advancements such as the Internet of Things (IoT), data analytics, and mobile applications. This paper explores modern trends in digitization, the benefits of digitalization for facilities management (FM) and maintenance, and the challenges faced during implementation. Through a detailed review of case studies and scholarly research, this paper highlights how digitalization improves efficiency, reduces operational costs, and enhances predictive maintenance capabilities, ultimately offering long-term operational and strategic advantages. Furthermore, challenges such as high costs, cybersecurity, and personnel training are addressed, underscoring the need for robust transition strategies to ensure effective implementation.

Day 02: Monday 27 January 2025

Fostering Innovation through Leveraging Disruptive Technologies

Eng. Yazeed Al-Owaid
Programs Director
Saudi Aramco
Saudi Arabia

Biography:

Yazeed Al-Owaid is Programs Director with over 14 years of expertise in leading large-scale projects in innovation management, operational excellence, and strategic planning. Armed with a Bachelor's degree in Applied Electrical Engineering and prestigious certifications like PMP and ISO 56002:2019 Lead Auditor, he has successfully driven over $50 million in value creation through optimization and technology deployment. his leadership has consistently delivered transformative results, from enhancing operational efficiency to fostering a culture of continuous improvement.

Abstract:

Innovation and technology programs are among the top priority for the success of any industry around the globe. Combining these programs addresses the key gaps that are found on the current practices where a culture of innovation, eco-system and sustainability is captivated by leveraging disruptive technologies including but not limited to generative AI, digital twin, VR …. Etc. The impact of utilizing a top to bottom approach in running a business has created a barrier in the workforce to adopt new technologies or brainstorm innovative ideas. Even with the engagement form management, leadership, allocating resources, rewards and metrics, yet, it is challenging to experience the change of culture, achieve what innovation program are designed for to gain a competitive edge. Thus, a comprehensive program was established where technology and innovation are presented in one platform. This platform is designed to showcase innovative ideas, technology projects and on-going virtual campaigns across the organization.

To improve and streamline innovative ideas, guiding principles, procedures and the recommended best practices in a concise description were provided and delivered with the help of generative AI that is impeded within the innovation and technology platform. The generative AI is a one example of combining innovation and technology to gain insight based on the organization accumulated experience which were formulated into best practices and procedures along with other suggestions received by the users directly. The ultimate goal of this program is an autonomous and structured approach to refine innovative idea management processes and make it more efficient and valuable. Key metrices were developed as a starting point and are adopted to achieve a set of goals in a value adding system to constantly improve the innovation culture with the focus on quality, scalability and impact on the organization.

Part of the key metrics are the participation rate, idea review rate, approval rate, implementation rate and innovation realized value. These metrics were the starting point to measure the effectiveness of the innovation program. However, when combined with technology deployment, more metrics are added including: technology realized value, approved technology utilization, development of technology roadmap and others. As a result, this unique innovative and technology program has paved the way toward creating the culture of innovation. In addition, it proved its credibility through a comprehensive platform equipped with the necessary tools to effectively evaluate and process innovative ideas and technologies. Moreover, it provided a dynamic guideline for improving the idea evaluation process and enhancing the implementations of innovative ideas and technology deployment companywide.

Day 02: Monday 27 January 2025

Chairman:
Eng. Waleed Alsaadi
Board Member
Arab Asset, Facility and
Maintenance Management
Council (OMAINTEC)
CEO, National Grid
Saudi Arabia

Amro Mohamed
Regional Cybersecurity
Sales Manager
MEA Region, Omicron
Electronics Middle East
Bahrain

Eng. Ahmad Abdullatif
Project Manager
Advanced Communication
and Electronics Systems Co.
Saudi Arabia

Eng. Mostafa Ahmed
Transmission Engineer
Saudi Electricity Company
Saudi Arabia

Eng. Ahmed Alawami
Division Manager
Saudi Electricity Company
Saudi Arabia

Day 02: Monday 27 January 2025

Chairman:

Eng. Waleed Alsaadi
Board Member
Arab Asset, Facility and Maintenance Management Council (OMAINTEC)
CEO, National Grid
Saudi Arabia

Biography:

Waleed Abdullah Al-Saadi is the CEO of Saudi Arabia's National Grid Company, with over 28 years of rich technical and management experience in this field, on which he is based on to advance the company's business and achieve its ambitious strategic development goals.

He held several positions in the operation and maintenance of the National Grid of the Saudi Electricity Company until 2012, and was appointed as Deputy of Technical Services Activity with the launch of the National Grid Company 2012, and in 2017, he was appointed as Deputy of Engineering at the National Grid Company.

AlSaadi holds bachelor's degree in electrical engineering in 1995 from King Saud University in Riyadh. He served on the Board of Directors of Gulf Electrical Equipment Inspection Laboratory (2015-2020) in addition to a membership in the Board of Trustees of the Arab Council for Operation and Maintenance, a membership in the Board of Directors of Solutions Valley Company, a membership in the Board of Directors of Saudi Electricity Project Development Company and a membership in the Board of Directors of Saudi Energy Production Company.

Day 02: Monday 27 January 2025

Exposing Hidden Flaws in the Power Grid: Lessons learned from IDS Deployments in Over 100 Energy Facilities

Amro Mohamed
Regional Cybersecurity
Sales Manager
MEA Region, Omicron Electronics Middle East
Bahrain

Biography:

Cybersecurity Sales Manager, MEA RegionOMICRON Electronics Middle East
Professional Background:
- Joined OMICRON in 2021, focusing on cybersecurity initiatives
- Over 18 years of experience in the IT sector
- More than 12 years in cybersecurity implementation, consulting, and governance

Certifications:
- Certified ISA/IEC 62443 Cybersecurity Fundamentals Specialist
- ISACA Certification for Information Security Managers (CISM#1841498)

Experience:
Held technical, managerial, and leadership roles in government and corporate entities, ISPs, and MSSPs

Education:
Bachelor's degree in Computer Science from Sikkim Manipal University (SMU), India

Current Education:
Pursuing an MBA in Artificial Intelligence at Cumbria University

Abstract:

This paper analyzes security issues in over 100 global energy facilities, identifying the top five most significant network security risks and operational issues, such as configuration errors and network failures. Using Intrusion Detection Systems (IDS), the study highlights pervasive security threats and offers insights into secure PAC system implementations.

Fault Management in HVDC Transmission Lines

Eng. Ahmad Abdullatif

Project Manager
Advanced Communication and Electronics Systems Co.
Saudi Arabia

Biography:

Ahmad Abdullatif graduated in 2017 with a Bachelor of Engineering (Hons) in Electrical & Electronics Engineering from UCSI University, the top-ranked private university in Malaysia that year. During his academic journey, he contributed to a research paper on High Voltage Direct Current (HVDC) Transmission systems, focusing on various types and topologies, as well as performing an in-depth analysis of faults on transmission lines and the resulting impact on system stability.

Ahmad has accumulated over seven years of professional experience in Saudi Arabia, with a specialized focus on operation and maintenance in critical facility management. Throughout his career, he has demonstrated his expertise in managing complex engineering systems and ensuring their smooth operation in high-stakes environments. His project management skills are backed by his PMP certification, enabling him to lead teams effectively and ensure successful project outcomes.

Abstract:

HVDC transmission systems provide a more economical alternative to HVAC transmission systems for long distance, and bulk power delivery. A bipolar HVDC lines uses only two insulated sets of conductors rather than three. This will lead to smaller line towers which will lead to reducing the construction cost by approximation of 30%, also this will help to reduce the Right-Of-Way (ROW) which in some cases will be a major cost for the transmission system. HVDC transmission system allows delivering more power over fewer lines with narrower ROW. Hence, reducing ROW will help the environment by reducing the areas used in transmission, especially in environmentally sensitive areas. Since there is no induction or alternating electro-magnetic field in the DC cables, this will help to share ROW with other utilities without any impact. Recently the industry is going for HVDC to transmit bulk energy with less losses and more controllable system, therefore a proposed method to control any fault occurring to that system is investigated.

Day 02: Monday 27 January 2025

Partial Discharge Diagnostic of High Voltage Power Cables with Associated Accessories and the Human Experience for Installation

Eng. Mostafa Ahmed
Transmission Engineer
Saudi Electricity Company
Saudi Arabia

Biography:

Mostafa Mokhtar Hassanein Ahmed,
- Holding a master degree in Partial Discharge Diagnosis for High Voltage Power Cables and Their Accessories,
- Ph.D. HV Electrical Eng. I am Currently a Student for Ph.D in High Voltag Electrical Engineer, Al-Azher University

Published three Research Papers:
- Advances in Electrical Engineering Systems (AEES) Vol. 1, No. 4, 2012, ISSN 2167-633X Copyright c World Science Publisher, United States.
- B1_205_2014 - Cigre 2014,
- 4th Saudi User Meeting -OMICRON electronics 2021-(7 . 9 June 2021)
- GCC POWER 2023-Cigre 2023, (13 . 15 Nov. 2023)
- GCC POWER 2024-Cigre 2024, (11 . 13 Nov. 2024)
- 16 Year of experience in High Voltage Power field

1-Company: Saudi Electricity Company (SEC) Transmission Engineer 16/2/2014 until Now
2-Company: Egyptian Electricity Holding Company (EEHC) Testing Engineer at Extra High Voltage Research Center (PEHVRC)
November 25, 2008 until 15/2/2014.

Abstract:

Partial discharge (PD) measurement methods are most important and preferred in testing of underground high voltage cables and they have received much attention in recent years. Apparent charge, partial discharge inception voltage as well as number and distribution of PD pulses are most important quantities for the determination of the insulation quality. Identification with certain PD patterns and localization of PD are most important aspects. Different ways to suppress external noise is applied to detect signals with high sensitivity also in difficult on-site conditions. Partial discharge detection method can be classified into two techniques, conventional and un-conventional. Conventional PD detection is a standardized method for PD measurement as described in IEC 60270. This method based on measurement of apparent charge displacement q in the leads of the sample. This charge is usually expressed in pico-Coulombs (pC). Un-conventional PD measurement is based on detection of high frequency PD activities. In this paper an overview covering best practices for PD measuring using conventional and un-conventional methods is presented and predictive diagnostic programs to cable system is applied and the Human Experience Level for installation (Joints &Terminations) of the Power Cables. It contains also the results of many measurements carried out on XLPE cable system.

Short Circuit Faults Prediction Using Machine Learning in Large-Scale Power System

Eng. Ahmed Alawami
Division Manager
Saudi Electricity Company
Saudi Arabia

Biography:

Eng. Ahmed AlAwami is a division manager at Saudi Electricity Company (SEC) with sixteen years of experience working in Saudi Electricity Company (SEC). He is specialized in analyzing/studying in SEC network and responsible for implementing the suitable operation methods to ensure a reliable and secured power supply through the network. Exploring the worldwide implemented technologies that have more potential to evolve and strength the distribution system for the OT & IT. Also, Lead the initiation and planning of a project and ensure technical feasibility, continuously evaluating projects to ensure they are meeting company standards, adhering to budgets, and meeting deadlines and accurately documenting the project's creation, development, and execution as well as documenting the project's scope, budget, and justification. Also, machine learning implementer in power system improvement like load forecasting, faults prediction etc, design machine learning systems, Research and implement appropriate ML algorithms and tools, develop machine learning applications according to requirements, select appropriate datasets and data representation methods, run machine learning tests and experiments and Perform statistical analysis and fine-tuning using test results. He have written and published multiple technical papers that address real use cases in SEC organizations

Abstract:

Transmission system's safety and protection are the primary concerns and challenging tasks to ensure the power system's stability and reliability for seamless functioning and avoidance of any significant discrepancies. Faults in power transmission lines can occur for many different reasons. Once protective relays detect a fault, they must clear the fault in a timely manner. Even though there are many reasons for the occurrence of faults, tasks to find fault location and types (as a post-fault analysis) are still major concerns. By reducing the time of post-fault analysis, the faulted system can be maintained faster by reducing the restoration time, and this could reduce the failure costs.

Fault techniques have been categorized according to several different criteria and aspects, namely model-based approaches, knowledge-based methods, and data driven approaches, when judgments are made based on the analysis and interpretation of numerical data rather than on observation or personal experience. A data-driven strategy ensures that ideas and solutions are backed by verifiable facts rather than assumptions and personal experience.

Machine learning methods to describe the fault analysis, particularly the applications of decision trees, support vector machines, and k-nearest neighbors (k-NN), have been proposed to classify the faults. They showed that computational complexity to process the high-dimensional data and reduction techniques to reconstruct the data are required.

However, the data reduction brings a risk of loss of information by lowering the dimensions, and the accuracy of the results is compromised. Therefore, in this paper, it is going to be discussed and shown that how machine learning and deep learning algorithms could be used to detect and predict the short circuit faults to improve the power syst resiliency of the power transmission system.

Day 02: Monday 27 January 2025

2 PARALLEL SESSIONS WITH WORSHOP 10

Session 02:
Innovative Solutions for Smart Facility Management

Hall A
10:25 – 11:25

Chairman:
Eng. Ali Alsuwaidi
Board Member
Arab Asset, Facility and
Maintenance Management
Council (OMAINTEC)
Vice President, MEFMA
United Arab Emirates

Dr. Abdelkarim Rezk
General Manager Operation &
Maintenance Sector
AlMajal Alarabi
Group Company
Saudi Arabia

Eng. Rami Alsodi
Senior Researcher
Department of
Public Works
United Arab Emirates

Eng. Azhar Alqaissi
Consultant Engineer
Visiting Professor at Several
Colleges and Institutes in
Engineering Fields
Oman

Eng. Mohamed Siddig
Facility Manager
Alrasikhat Real-estate
Investment Company
Saudi Arabia

Day 02: Monday 27 January 2025

Chairman:

Eng. Ali Alsuwaidi
Board Member
Arab Asset, Facility and Maintenance Management Council (OMAINTEC)
Vice President, MEFMA
United Arab Emirates

Biography:

Eng. Ali AlSuwaidi is one of the influential leaders of the facilities management and asset management industry in the Middle East. He has been in the industry since the nascent stages and has been tasked with a range of prestigious, mission-critical, high-profile assignments. His valuable volunteering contributed to the growth of the industry in the Middle East and especially GCC countries.

Eng. Ali is one of the FM subject matter experts worldwide and a visionary speaker participating in facility management workshops, conferences, and seminars. Amongst many other important tasks, Ali was the first operation head for the tallest tower in the world, Burj Khalifa.

In addition to being one of the key founders of MEFMA and a prominent figure in the Middle East, he also has a great impact and huge influence globally by being the Vice Chairman in the Global FM Association (GFM) since January 2021 and previously as a board of director since January 2013, along with having a valuable impact as well on various entities in which he held key positions.

Eng. Ali holds MBA from American University of Sharjah and B.S in Electrical Engineering from Toledo, Ohio-USA. He also holds Mini MBA certificate of leadership from INSEAD, and he is a graduate from Dubai Government leadership program in coordination with The Wharton school of Business, USA. Ali Holds international diploma on health, safety and environment management from British Safety council.

Day 02: Monday 27 January 2025

Buildings and Facilities Management Digital Asset Management

Dr. Abdelkarim Rezk
General Manager Operation & Maintenance Sector
AlMajal Alarabi
Group Company
Saudi Arabia

Biography:

Abdelkarim Rezk brings thirty years of extensive experience in maintenance, operations, facility services, and project management to his professional endeavors. Throughout his career, he has continuously honed his expertise through various courses in project management, leadership, and executive management.

Mr. Rezk has held a range of executive and administrative positions, demonstrating his versatility and leadership abilities. Notably, he has served as the Director of the Office of the Advisor to the Minister of Health, where he provided strategic guidance and support. He also enjoyed a successful tenure as the Executive Director of a medical maintenance company, showcasing his proficiency in managing complex operations within the healthcare sector. Additionally, he has contributed significantly as the Director of Feasibility Studies and in Financial and Banking Consultations, where his analytical skills and financial acumen have played a vital role in project viability assessments.

Currently, Abdelkarim Rezk is the General Manager of the Maintenance and Operations Sector at the Arab Field Group. In this role, he is responsible for overseeing all operational aspects, ensuring efficiency and excellence in service delivery.

Abstract:

Digitization of assets and facilities is a vital requirement for continuity, sustainability, and achieving continuous growth and competition. It also measures the ability to create new opportunities in operational methods. Digitization involves adopting modern technology to transform traditional processes into automated and intelligent operations that manage all aspects of facilities and assets in a more effective and accurate manner. Facilities management is one of the best areas that allow us to utilize digitization, and at the same time, it is one of the most fortunate fields to benefit from digitization in improving operational efficiency, reducing costs, and enhancing overall performance.

- Digital management is not just a technological improvement but a fundamental transformation in the management of facilities and assets.
- Asset digitization enhances operational speed, sustainability, and necessary protection for assets.
- Asset digitization contributes to enhancing predictive capability and facilitates proactive maintenance by predicting asset behavior and performance.
- Asset digitization creates a different capacity that enables integration with other systems and adaptation to technological advancements.
- Asset digitization makes a significant difference in cost, improves performance quality, boosts return on investment, and ensures sustainability.

Artificial Intelligence and Machine Learning: The Future of Concrete Technology and Maintenance

Eng. Rami Alsodi
Senior Researcher
Department of Public Works
United Arab Emirates

Biography:

Rami Alsodi, a Civil Engineering PhD student at the University of Sharjah, was born and raised in the United Arab Emirates. Currently works at Sharjah Department of Public Works Research and Studies Department. Research Interests include Geotechnical, Buildings, and Environment.

Abstract:

Construction is considered one of the primary consumers of resources and energy and the most damaging to the environment, generating one of the most significant amounts of CO_2. Cement, an essential concrete component, is one of the world's most widely used construction materials, responsible for about 7% of CO_2 emissions. This underscores the importance of quality control, maintenance, and sustainability in preserving the current built stock and extending the standing structures' life span, ensuring that their impact on the environment during their utilization is minimal. However, despite advancements in concrete science, designing concrete with specific properties remains a complex task due to the increasing complexity of cementitious systems. Machine learning (ML), known for its ability to handle complex tasks autonomously, has shown significant promise in concrete research. As ML is rapidly being adopted for concrete mixture design and other functions, it's crucial to understand its methodological limitations and establish best practices in this emerging computational field. Integrating Artificial Intelligence (AI) and Machine Learning (ML) into the maintenance and repair of concrete structures has revolutionized the industry, enhancing predictive capabilities, optimizing operational efficiency, and reducing costs. This paper provides a comprehensive overview of the evolution of AI and ML in concrete structure maintenance, examines current trends, and explores future possibilities. Graphs and references are included to support the discussion. This paper explores the positive impacts of ML on concrete science, discusses the implementation, application, and interpretation of ML algorithms, and outlines future directions for fully leveraging ML models in the concrete industry. It also emphasizes the vital role of AI and ML in the evaluation, repair, and maintenance management of structures.

Day 02: Monday 27 January 2025

Risk Management, Asset Digitization & Operational Excellence in Organization & Companies

Eng. Azhar Alqaissi
Consultant Engineer
Visiting Professor at Several Colleges and Institutes in Engineering Fields
Oman

Biography:

- She has more than 25 years of experience in several engineering fields.
- Academic achievement
- Bachelor's degree in Civil Engineering / University of Baghdad
- Certificate (Higher Diploma) in Project Management (United Kingdom)
- Master of Business Administration (UK) MBA certificate
- Training certificates from European countries
- Professional Project Management Certificate (PMP) UK.
- From the European Board (certified international trainer). (T.O.T) certificate
- Fellow of the British Society of Civil Engineers. (FICE) Certificate
- Professional experience
- Director General of Transport and Communications Projects/Iraq.
- Supervising consulting studies such as (railway network designs and Baghdad metro design)
- (Supervision of a Belgian company that implemented a multi-storey building with steel structures)
- Managing director of an engineering consulting company
- Expert in railway projects in the GCC network / Sultanate of Oman
- Lecturing at institutes to hold training courses in engineering fields

Day 02: Monday 27 January 2025

Abstract:

Risk management is a strategic organizational process focused on identifying and evaluating potential risks that could impact an organization's objectives and performance. This approach aims to mitigate the negative consequences of risks while capitalizing on favorable opportunities through digitization and the strategic use of information technology. By enhancing the effectiveness of internal and external auditing, organizations can better identify both expected and unforeseen risks, as well as sudden disasters, thereby minimizing the effort and costs associated with risk mitigation.

The integration of information technology and digitization plays a crucial role in monitoring processes, enhancing performance efficiency, and enabling the timely identification of solutions to address risk challenges. Effective risk management encompasses various operations, including risk management planning, risk identification, qualitative and quantitative risk analysis, risk response analysis, and risk monitoring and control. These processes are significantly bolstered by digitization and artificial intelligence, allowing organizations to predict risks and their severity, explore solutions, and determine the appropriate treatment for threats to assets and facilities, often referred to as predictive maintenance.

Unexpected risks may stem from internal defects or external events that can occur suddenly, posing threats to individuals, assets, or the environment. Proactive action plans and corrective or preventive measures can help avoid or diminish these risks, ultimately preventing resource waste, errors, and rework—particularly during operation and maintenance phases—while ensuring asset sustainability without incurring additional costs.

Moreover, digitization is fundamental for documenting processes and identifying alternative solutions that foster continuous improvement in risk management and the sustainable operation of assets and businesses. It involves converting data and information into digital formats suitable for storage, processing, and sharing via digital technology. This transformation includes digitizing paper documents into electronic files, utilizing databases and information systems for data organization, and adopting cloud technology and decentralized computing for storage and data sharing over the Internet.

Digitization enhances operational efficiency, reduces errors, saves time, and improves collaboration and communication, contributing to advancements in e-commerce, big data analytics, and technological innovation, particularly in risk avoidance. Runciman highlights the implications of algorithms and the challenges and transformations societies may encounter with the increasing reliance on algorithms and artificial intelligence, proposing a virtual decision-making system for organizations to address crises and unexpected threats effectively.

In light of rising cyber threats, hacking incidents, data theft, and electronic breaches, organizations must adopt advanced strategies for the continuous protection and maintenance of their digital assets. Training personnel in modern technologies is crucial for developing programs that confront these threats while ensuring sustainable operations without wasting resources or incurring unnecessary costs. Understanding and implementing risk management practices are vital for achieving organizational goals and responding effectively to events, ensuring sustainability and productivity. Therefore, the documentation of all information through digitization and digital transformation is essential.

effectively to events, ensuring sustainability and productivity. Therefore, the documentation of all information through digitization and digital transformation is essential.

Day 02: Monday 27 January 2025

Utilization of Artificial Intelligence in Monitoring Key Performance Indicators for Facility Management Performance

Eng. Mohamed Siddig
Facility Manager
Alrasikhat Real-estate Investment Company
Saudi Arabia

Biography:

LinkedIn Top Facility Management (FM) Voice - Results-oriented professional with extensive experience in managing multimillion-dollar real estate portfolios, leading large teams, and delivering top-tier facility services across wide range of properties. Proven ability to efficiently manage hard and soft services, develop strategic facility management plans, and optimize resource allocation for facilities of varying sizes and complexities. Demonstrated expertise in overseeing complex projects, providing competitive bidding support, and innovating operation strategies by integrating available resources with cutting-edge technologies. Adept at fostering sustainability solutions, resulting in significant energy savings and cost reductions. Strategic leader with strong grasp of asset management, equipped with excellent communication and interpersonal skills to forge strong relationships with a, tenants, and team members. Committed to delivering excellence in all endeavors, maintaining keen eye for detail, and continuously improving operations to drive business growth and profitability.

Abstract:

This paper explores the concepts of Key Performance Indicators (KPIs) and their significance in evaluating the performance of facilities management. We examine the critical factors that influence the inputs of KPIs and delve into behavior recognition systems and their integration with artificial intelligence to analyze the data collected from these systems.

Our findings indicate numerous opportunities to enhance the measurement of facilities management performance through the application of behavior recognition systems and artificial intelligence. This includes the capability to assess equipment behavior, monitor facility visitor interactions, and evaluate the actions of facilities management service providers.

Furthermore, our research reveals the potential to boost employee productivity by up to 40% through the implementation of artificial intelligence applications, including behavior recognition systems.

Day 02: Monday 27 January 2025

Chairman:
Eng. Essam Alwafi
Head of GCC
Lab Consultation
GCC Lab
Saudi Arabia

Eng. Mohammed Al-Haj
Facility Engineer
Sulaiman Alrajhi University
Saudi Arabia

Eng. Salem Alshahrani
Lead Electrical Engineer
KEMYA
Saudi Arabia

Dr. Ahmed Kabeel
Lecturer
Electronics and
Communication Dept
Delta University
Egypt

Eng. Nehal Alyamani
Renewable Energy Engineer
Member of IEEE-WSA
Affiliated Researcher
Effat University
Saudi Arabia

Day 02: Monday 27 January 2025

Chairman:

Eng. Essam Alwafi
Head of GCC Lab Consultation
GCC Lab
Saudi Arabia

Biography:

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Optimization and Performance Evaluation of a Hybrid Solar Power System for University Campuses: A Case Study with Environmental and Economic Impacts

Eng. Mohammed Al-Haj
Facility Engineer
Sulaiman Alrajhi University
Saudi Arabia

Biography:

Electrical Engineer in Facilities Management at Sulaiman Al-Rajhi University, with an interest in energy systems and the integration of renewable energy sources. Focused on developing smart and sustainable solutions to enhance facility efficiency and extend operational lifespans, with a particular emphasis on advanced maintenance technologies. Actively involved in research projects that explore the impact of renewable energy on infrastructure resilience and operational cost reduction. Mohammed is committed to contributing to the community through volunteer activities, participating in initiatives aimed at raising awareness about clean energy, and promoting sustainable energy use. He has participated in several scientific conferences and seminars in the energy field, enhancing his knowledge and facilitating the exchange of expertise with other professionals. He strives to develop the field and sector continuously.

Abstract:

This study investigates the design and performance analysis of a hybrid solar power system to meet the energy demands of Sulaiman Al-Rajhi University. Utilizing HOMER software, the system's configuration was optimized for technical and economic feasibility. The results indicate that the solar panels can produce 425,427 kWh annually, covering 45.7% of the university's energy needs. This reduces annual carbon emissions by approximately 232,163.64 kg CO_2 and achieves annual savings of 76,372.39 SAR, with a payback period of 14.56 years. This research highlights the significant environmental and economic benefits of integrating solar energy in university infrastructures.

Day 02: Monday 27 January 2025

Frequency Regulation Coordinated Framework: Hybrid Battery Energy Storage System and Supercapacitor

Eng. Salem Alshahrani
Lead Electrical Engineer
KEMYA
Saudi Arabia

Biography:

Salem Alshahrani is a lead electrical engineer in the Asset Engineering Department at KEMYA in Jubail, Saudi Arabia since 2022. Salem holds two Master's Degrees: Engineering Management and Electrical Engineering from KFUPM. Salem's research interests include power system reliability, RE integration into power systems, relay protective systems, and power system stability. Salem has led many EPC projects including substation erection, and motor start-ups

Abstract:

Integrating renewable energy (RE) resources introduces several challenges to the conventional network, one of which is the degraded system inertial response. Frequency regulation (FR) works on stabilizing the system frequency by reducing the mismatch between generation and demand. Apart from conventional FR methods, storage systems can be utilized for such a purpose.

A hybrid storage system supported by a wind power source comprising a battery energy storage system (BESS) and a supercapacitor (SC) is considered in this study. The hybrid system aims to balance the given network's real frequency data. The corresponding capacity of both the BESS and the SC are optimized using nonlinear programming along with the set of constraints. The power density and energy density characteristics of both storage units are optimized in terms of their capacities.

Day 02: Monday 27 January 2025

Solar Panel Optimization Based on Graphene-Silicon-Droplet Integration

Dr. Ahmed Kabeel
Lecturer
Electronics and Communication Dept
Delta University
Egypt

Biography:

Ahmed received a BSc degree in electronics and communication engineering from higher institute of engineering and technology in new Damietta, Egypt in 2012 and received his M.Sc. in 2015 from Mansoura university and Ph.D. in 2019 from AL Menia university, His M.Sc. dedicated to UWBA design for ground penetrating radar for environmental exploration, the Ph.D. is devoted to introduce a new spectrum sensing algorithm based on antenna array for cognitive radio application also has introduce an enhancement using beamforming algorithm,

Abstract:

Solar panels play a vital role in renewable energy systems by converting sunlight into electricity. However, traditional panels have faced limitations in efficiency and cost-effectiveness, hindering widespread adoption. Recent advancements have focused on improving solar panel technologies, including the integration of perovskite-graphene, perovskite-silicon, and droplet materials. Perovskite solar cells have garnered attention due to their strong light-absorption properties and ease of fabrication, offering potential efficiency enhancements. Combining graphene and silicon in perovskite layers introduces benefits, such as improved panel efficiency through enhanced charge transport. Graphene's exceptional conductivity and durability further bolster performance. Additionally, the innovative concept of raindrop energy harvesting capitalizes on falling raindrops' kinetic energy to generate bursts of electrical charge, expanding sustainable energy capture possibilities, especially in regions with ample rainfall. This review comprehensively explores hybrid perovskite-silicon and perovskite-graphene solar panels, coupled with raindrop energy harvesting, elucidating principles, challenges, and potential applications. By evaluating research findings and technological advancements, this approach offers insight into the evolution of solar energy systems, addressing growing energy demands and the urgency for renewable sources.

Day 02: Monday 27 January 2025

Superconducting Magnetic Energy Storage (SMES) Energy Applications

Eng. Nehal Alyamani
Renewable Energy Engineer
Member of IEEE-WSA
Affiliated Researcher
Effat University
Saudi Arabia

Biography:

- Certified Electrical Engineer.
- Certified Trainer Technical and Vocational Corporation.
- Received her Bachelor's degree from Effat University (2017), in Electrical and Computer Engineering.
- Received her master's degree in (Energy Engineering - Renewable Energy) from Effat University (2021).
- Between 2016 - 2022 She published several research work via IEEE and other engineering and research portals; related to Digital systems, Sustainability, Renewable Energy, and Smart cities.
- Between 2021 – until now worked on electrical design engineering projects.
- Her current interesting in research projects: on renewable energy (solar & wind), power system development, waste management, environment & sustainability studies.

Abstract:

This session will provide an overview of the SMES advantages and the promising advancements as a form of storage technology in the smart grid that can provide a solution to enable the large-scale expansion of renewable energy networking and a faster transition toward a low CO_2 energy system, remaining the grid stability and reliability.

Day 02: Monday 27 January 2025

2 PARALLEL SESSIONS

Session 03:
The Role of IoT in Smart Maintenance Practices

Hall A
11:35 - 12:35

Chairman:

Dr. Ayman Alwaleedi
Board Member
Arab Asset, Facility and
Maintenance Management
Council (OMAINTEC)
Executive Director
Rua Almadinah
PIF, Saudi Arabia

Prof. Mohamed Fathy Aref
Chair of the Smart Cities
Code Committee
Housing
and Building National
Research Center
Egypt

Prof. Mohamed Marzouk
Professor
Cairo University
Egypt

Eng. Yazeed Alhaqbani
Electric Engineer
Prince Sattam Bin
Abdulaziz University
Saudi Arabia

Dr. Mostafa El Hawary
VP-Technology
NAMAA Consult
Saudi Arabia

Day 02: Monday 27 January 2025

Chairman:

Dr. Ayman Alwaleedi
Board Member
Arab Asset, Facility and Maintenance Management Council (OMAINTEC)
Executive Director
Rua Almadinah
PIF, Saudi Arabia

Biography:

Bringing more than 20 years of experience in project development, Master Planning, Design, construction and Facility management. Knowledgeable in managing and developing the delivery and operation duties by ensuring proper project execution through monitoring project stage gates to ensure high-end and on-time delivery. Demonstrated excellence in controlling mega projects right from inception to completion, ensuring compliance in terms of quality, standards, and materials and alignment with agreed metrics, business objectives and environmental sustainability standards. Expertise in managing global consultants to set up environmental sustainability standards, project constructability, OSM, independent commissioning agent, site supervision, executive design, landscape and permitting. strong relationship management & communication skills with an ability to serve as a role model.

Day 02: Monday 27 January 2025

Buildings and Facilities Management Digital Asset Management

Prof. Mohamed Fathy Aref
Chair of the Smart Cities
Code Committee Housing and Building National Research Center
Egypt

Biography:

Mohamed Fathy Aref is the Chairman of the Permanent Committee for the Preparation of the Egyptian Code for the Foundations and Requirements for Planning, Management, Operation, and Sustainability of Smart Cities. He works at the National Center for Housing and Building Research in Cairo, which is affiliated with the Ministry of Housing, Utilities, and Urban Communities. With a distinguished academic career that began in 1983, Aref has progressed from teaching assistant to professor, contributing to the education of future urban planners. He earned his Bachelor's degree in Urban Planning in 1982, followed by a Master's degree in 1989 and a PhD in 1999. With approximately 42 years of practical and scientific experience, he has participated in numerous applied scientific studies and research projects in urban management, collaborating with both local and international organizations. Aref has published many research papers in specialized journals and presented at regional and international conferences. Additionally, he serves as a consultant and urban planning expert for several consulting offices, further enriching his contributions to the field.

Abstract:

This paper explores the critical role of modern integrated technological systems in safeguarding smart buildings from fire hazards through the innovative applications of the Internet of Things (IoT) in maintenance management and smart fire prevention. This study serves as a practical illustration of the rapid transformations brought about by the digital industrial revolution in the context of fire protection for smart infrastructure.
To achieve the research objectives, the paper delves into essential concepts and determinants related to smart buildings and the applications of the digital industrial revolution—specifically the IoT—in enhancing the efficiency of security and safety systems designed to protect buildings from fire risks. Additionally, the paper addresses the advantages provided by cloud platforms within smart buildings, which facilitate modern security, protection, and maintenance systems.

An analytical study is conducted on a regional example, focusing on Dubai's experience in smart monitoring. As a leader in adopting advanced technologies, Dubai's initiative in utilizing IoT for smart fire prevention and maintenance serves as a pioneering case study. The paper subsequently formulates a comprehensive vision and methodology for achieving security, safety, and maintenance of buildings through the applications of the digital industrial revolution, culminating in important findings and recommendations.

Day 02: Monday 27 January 2025

Automating Subsurface Utilities Detection and Visualization using Deep Learning and Augmented Reality

Prof. Mohamed Marzouk
Professor
Cairo University
Egypt

Biography:

Dr. Marzouk is Professor of Construction Engineering and Management in the Structural Engineering Department, Faculty of Engineering, Cairo University. Dr. Marzouk has more 25 years of experience in the Civil Engineering. His experience covers different phases of projects including design, construction, monitoring, research, consulting, and project management. He also served as a consultant for many mega-construction projects in Egypt. Dr. Marzouk has been involved in several academic and scientific committees. He is acting as a chairman of Building Information Modeling (BIM) Egyptian Code. Dr. Marzouk authored and co-authored over 350 scientific publications. He is recognized and named among the top 2% of the world's most impactful scientists by Stanford University and Elsevier for five successive years 2020 to 2024.

Abstract:

Recent urban development requires advanced utility management through modern technology implementation to optimize utility management with minimal risks. While commonly used, traditional methods are often time-consuming and prone to human errors, leading to inefficiencies. This research proposes a comprehensive framework that leverages advanced technologies, specifically Ground Penetrating Radar (GPR), Mask R-CNN Deep Learning Model, and Augmented Reality (AR), to automate and enhance the process of subsurface utility detection and visualization. The framework is validated through the implementation of a case study where data from GPR scans are processed to detect and visualize buried utilities. The case study demonstrates the efficiency of integrating deep learning techniques with GOR data, significantly improving the accuracy of utilities detection. On the other hand, the use of AR-enabled seamless visualization of these results, offering an interactive experience for field operations. This approach does not only reduce the risk of damaging existing utilities but also accelerates decision-making processes where the developed system demonstrates promising results, providing an efficient utility detection and visualization solution.

Day 02: Monday 27 January 2025

Assessing the Impact of Digital Initiatives on Operational Excellence Using Key Performance Indicators (KPIs) and AI-Based Analytics

Eng. Yazeed Alhaqbani
Electric Engineer
Prince Sattam Bin
Abdulaziz University
Saudi Arabia

Biography:

As an advisor to vice rector at Prince Sattam bin Abdulaziz University, my focus is on providing strategic counsel and analysis to support the Vice President's decision-making. My role capitalizes on strong communication and problem-solving skills, which were honed during my tenure as Director of Operations and Maintenance Management. There, we ensured the optimal performance and sustainability of the university's infrastructure.

My professional journey is marked by a commitment to enhancing operational efficiency and safety standards. With a deep understanding of electrical, computer, and communications engineering, my aim is to integrate technical expertise with innovative approaches to drive progress. Collaborating closely with cross-functional teams, I strive to align our operations with the university's overarching goals and values.

Abstract:

In the rapidly evolving landscape of digital transformation within the asset and facility management sector, the importance of using Key Performance Indicators (KPIs) to measure the impact of digital initiatives on operational excellence is increasingly recognized. This paper aims to provide a comprehensive framework for evaluating the performance of digital initiatives using KPIs, integrating AI-based analytics and Machine Learning to analyze big data and improve measurement accuracy. A case study from the asset management sector will be presented to illustrate how these tools can be applied to achieve tangible improvements in operational excellence.

Impact of Tailored Robots of Construction Engineering Industry & Facility Management

Dr. Mostafa El Hawary

VP-Technology
NAMAA Consult
Saudi Arabia

Biography:

Mostafa is a seasoned information technology and digital solutions expert with over 28 years of experience driving innovation and transformation across diverse industries. Throughout his illustrious career, Mostafa has honed his expertise in leveraging cutting-edge technologies to solve complex business challenges and unlock new avenues for growth.

With a proven track record of delivering impactful results, Mostafa continues to be a driving force in the information technology and digital solutions space, constantly seeking new opportunities to leverage technology to transform businesses and shape the future of the industry.

Abstract:

The emergence of tailored robots in the building and facilities management industry is transforming operational efficiency and service delivery. These advanced robotic systems automate routine tasks such as cleaning, maintenance, and inspections, allowing human personnel to focus on strategic activities that require critical thinking and decision-making. By enhancing precision and consistency, tailored robots improve the quality of services while reducing human error and operational costs. Their ability to function in diverse environments ensures safety and efficiency, particularly in hazardous or hard-to-reach areas. Moreover, the integration of robotics with smart building technologies and the Internet of Things (IoT) facilitates real-time monitoring and data analysis, enabling proactive maintenance and resource optimization. As the industry increasingly adopts robotics, the potential for enhanced productivity, improved tenant satisfaction, and sustainable practices expands, positioning tailored robots as vital contributors to the future of building and facilities management.

Day 02: Monday 27 January 2025

Chairman:
Dr. Mohamed Khoj
Dean of the Faculty
of Engineering
University of Business
and Technology
Saudi Arabia

Eng. Marco Tatti
Ttech Srl
Academia sas
Triz Consulting
Italy

Eng. Abdulrahman Alqahtani
Head of Power Plants
Works Quality Section
Central Sector
Saudi Electricity Company
Saudi Arabia

Arulraj Irudayasamy
Regional Application
Specialist for Power Utility
OMICRON Electronics
Middle East
Bahrain

Hind AlQasem
Senior Cybersecurity Analyst
Saudi Electricity Company
Saudi Arabia

Day 02: Monday 27 January 2025

Chairman:

Dr. Mohamed Khoj
Dean of the Faculty of Engineering
University of Business and Technology
Saudi Arabia

Biography:

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Day 02: Monday 27 January 2025

Innovation in Energy Fields with the TRIZ Method: Applications in Key Sectors for the Middle East

Eng. Marco Tatti
Ttech Srl
Academia sas
Triz Consulting
Italy

Biography:

Marco, a graduate in Aerospace Engineering from the Polytechnic University of Milan, began his career in academic research and later collaborated with several industrial companies in the field of production process optimization and technological innovation.

Since the beginning, he has coordinated cross-functional teams for the creation of innovative ideas and implementation of solutions, particularly in the two companies he founded and managed: one in Italy active in industrial nondestructive testing, and a Finnish start-up operating in energy storage solutions.
He has gained a deep knowledge of innovation processes working as an innovation consultant in major companies operating in different technological sectors. He has been interested in Systematic Innovation for over 25 years and uses TRIZ as main tool for strategic problem-solving and technology mapping.

Abstract:

The global energy sector faces significant challenges due to rising demand, depleting traditional resources, and the urgent need for a transition to renewable energy sources. This article delves into how the Theory of Inventive Problem Solving (TRIZ), a scientific methodology, can drive innovation in energy storage and efficiency, particularly in the Middle East. TRIZ provides a structured approach to overcoming technical contradictions, making it ideal for addressing complex problems in the energy sector. With its unique climatic conditions and heavy reliance on fossil fuels, the Middle East requires diversified and sustainable energy solutions. TRIZ's tools offer robust frameworks for developing high-level, efficient solutions. Examples include the application of TRIZ in the development of dynamic facades and advanced energy storage systems, demonstrating significant improvements in energy efficiency and sustainability. By fostering a culture of systematic innovation, TRIZ can help the Middle East transition to a more sustainable energy landscape, balancing economic growth with environmental responsibility. This approach not only addresses current energy challenges but also positions the region as a leader in global energy innovation.
Keywords: Innovation, TRIZ, Energy.

Digital Meters Calibration Monitoring Solution (Automation of Preventive Maintenance Work Orders & Escalation)

Eng. Abdulrahman Alqahtani
Head of Power Plants
Works Quality Section
Central Sector
Saudi Electricity Company
Saudi Arabia

Biography:

A mechanical engineer Graduated from King Fahd University of Petroleum and Minerals. 10 years of Experience in the energy production business filed(Saudi Electric Company).6 years working with 12th power plant O&M team . A member of Performance and Efficiency group on the power plant. A member of the combined cycle commissioning team. combined cycle maintenance team leader. Certified trainer in the Saudi Electricity Company. Media representative of the Twelfth Power Plant. A performance & efficiency Engineer in the Generation South Sector. Now , power plants works quality section Head – Central Operation Sector.

Abstract:

The power plants of the Saudi Electricity Company consume huge quantities of water and fuel to produce electricity with high reliability and sustainability.

Digital meters are used to calculate the consumption of fuel, water and electricity produced with high accuracy to control efficiency and build a base of confident with strategic stake holders.

Due to operational conditions that prevent shut down production units for the purpose of calibrating digital meters and some logistical obstacles, the company faces a challenge in calibrating digital meters at the specified time to calibrate them and control the monitoring of this process. A solution has been developed to monitoring Digital meters Calibration (Automation of Preventive Maintenance Work Orders & Escalation). It is essential to implement a sophisticated solution within SAP (Plant Maintenance module) that will facilitate the tracking of maintenance and calibration activities for digital meters equipment, as well as the validation of associated certificates.

A crucial component of this solution includes an automated escalation mechanism that notifies different managerial levels upon the overdue status of work orders, thereby ensuring timely intervention and mitigating potential operational disruptions.

Day 02: Monday 27 January 2025

Standardization of the Signal List and SCL Engineering for IEC 61850 Based Substation Projects: Challenges, Solutions and Future Directions

Arulraj Irudayasamy
Regional Application Specialist for Power Utility
OMICRON Electronics Middle East
Bahrain

Biography:

Arulraj graduated as an Electrical and Electronics Engineer at the Saveetha Engineering College-Chennai-India in 2014 and started at GK Power as Relay Service Engineer for MiCOM Numerical protection and control IEDs,later he worked as a Substation Automation System(SAS) Engineer for many projects for ALSTOM and Schneider Electric in India until 2018.

He worked as a verification and validation Engineer for bay level products in ABB Global R&D team from 2018 until 2020 and now he is responsible for IEC 61850 application testing and cybersecurity solutions in OMICRON.

Abstract:

The Substation Automation System (SAS) serves as a central hub for collecting diverse data used within substations. With IEC 61850 based substation, data collected from different (intelligent Electronic Device) IEDs should build interoperable homogeneous system. IEEE and IEC on electrical systems standards refer to IEC 61850-7 model to represent substation information. Ideally, testing, commissioning and maintaining IEC 61850 based SAS should be systematic and scalable. In reality, managing the various signals originating from different assets such as primary equipment status monitoring, control functions, diagnostics, and software-based protection and metering poses significant challenges. As experienced across projects, SAS systems are often not engineered and commissioned in a standardized manner. In most times substation projects follow bottom-up SCL engineering approach, individual Configured IED Description (CID) are integrated into System Configuration Description (SCD) to generate configuration file project. In these projects, it was observed that assignment of protection element to protection logical nodes is not consistent and general input/out logical nodes are often used. In case of high voltage, assignment of electrical equipment supervision, protection and control to logical nodes is not consistent. Client/server association are not configured. As a result, the specification, engineering, testing, commissioning, maintenance and upgrades of IEC 61850 based substation projects encounter numerous obstacles.

In this paper, we delve into the common challenges faced in existing IEC 61850 projects. Examples covers industrial system electrical substation as well as electrical utilities. The paper proposes recommended solutions and explore future directions to establish robust and future proof IEC 61850 based substations. By addressing signal list recommendations for different facility types and System Configuration Language (SCL) engineering standardization, we aim to enhance efficiency, reliability and interoperability in SAS. In addition, standardizing signal list and SCL engineering for IEC 61850 based substation projects facilitates automating services such as testing and baselining, open horizons for data analytics solutions.

Day 02: Monday 27 January 2025

Smart Meters' Cyber Security Risks and How to Overcome Them

Hind AlQasem
Senior Cybersecurity Analyst
Saudi Electricity Company
Saudi Arabia

Biography:

Hind Alqasem was born in Riyadh, Saudi Arabia. She is holding a master's degree in Cybersecurity from Fontbonne University in United States. and a bachelor's degree in information systems from Imam Mohammed bin Saud Islamic University in Saudi Arabia.

His employment experience included the National Cybersecurity Authority (NCA), Saudi Center for International Strategic Partnerships (SCISP), and Saudi Electricity Company. Her special fields of interest included IT and OT Cybersecurity.

Alqasem received many certification included CompTIA Security+, Pentest+, and CySA+, ,GIAC GSNA and GCCC, and FotiGate Administrator.

Abstract:

Cyber security in smart grid is essential to secure and protect the embedded systems from cyber-attacks. Utility companies have used millions of smart meters to gather power consumption data from client premises on a regular basis. These data are crucial and must be remained private and secure locally in smart meter as well as when transmitted remotely via the network. Smart meters security risks are constantly evolving, and many security breaches are occurring. This paper illustrates the cyber security risks associated with smart meters and how to overcome those risks by applying cyber security solutions.

Day 02: Monday 27 January 2025

International Maintenance Association Guideline of Digitalization of Assets, Facilities, and Maintenance Management
Re-Shaping the Future of Maintenance

◎ **13:15 – 14:45**   🖥 **Hall A**

Main Topic:
IMA is presenting its latest research study, "Guideline to Digitalization of Assets, Facilities,and Maintenance Management," conducted by leading global experts providing a strategic framework for organizations to navigate their digital transformation journeys.

Additionally, IMA is conducting a survey to gather insights on how digitalization impacts various sectors, focusing on the challenges faced, technologies implemented, and overall maturity levels in maintenance management.

Day 02: Monday 27 January 2025

2 PARALLEL SESSIONS WITH WORKSHOP 11

Session 04:
Future Trends in Sustainable Transportation Infrastructure

Hall A
15:00 - 16:00

Chairman:
Eng. Hazim Ibrahim
Vice President
Saudi Society of Civil
Engineering
Saudi Arabia

Prof. Altayeb Qasem
Professor
Imam Abdulrahman Bin
Faisal University (IAU)
Saudi Arabia

Eng. Simone Bernasconi
Founder & CEO
Avalle
Switzerland

Prof. Moustafa Kassab
Professor
University of Waterloo
Canada

Eng. Ashraf Sabry
Consultant Economist
LSF
Egypt

Day 02: Monday 27 January 2025

Chairman:

Eng. Hazim Abdulwahid
Vice President
Saudi Society of Civil Engineering
Saudi Arabia

Biography:

Master of Civil Engineering and Master of Business Adminstration
- Over 33 years of experince in Engineering Infrastructure Consultation .
 Executed vast number of projects in the field of trnsportation planning and traffic Engineering, transportation asset management, planning and design of Roads , Bridges , Tunnels and Airports .
- Delivered more than 40 papaers, training courses, workshops in transportation asset management, leadership and project management.
- Member of Civil Engineering Advisiory Board at King Abdulaziz Univeristy in KSA
- Vice President of Saudi Society of Civil Engineering.

Day 02: Monday 27 January 2025

Developing A BIM Based Model for Road Construction & Maintenance in Saudi Arabia

Prof. Altayeb Qasem
Professor
Imam Abdulrahman Bin Faisal University (IAU)
Saudi Arabia

Biography:

Altayeb Qasem is an experienced academic with a PhD in Construction Management, specializing in asset and infrastructure management. His diverse research interests encompass a wide range of multidisciplinary areas, with a current focus on developing performance assessment models for assets and buildings. Additionally, he explores the digitization of asset management across various fields. Currently, he serves as a faculty member at Imam Abdulrahman Bin Faisal University, where his work primarily involves creating innovative performance assessment tools for buildings and advancing virtual reality modeling techniques for the assessment and maintenance of building infrastructure.

Abstract:

This paper introduces a Building Information Modeling (BIM) based model specifically designed for road construction and maintenance in Saudi Arabia. The model incorporates a virtual environment for comprehensive visualization and management of all facilities within road premises. Utilizing a suite of software tools, including Civil 3D for the detailed modeling of roads and municipal facilities, the model transitions into Revit for enhanced rendering. Subsequently, it is transferred to Navisworks for animation and navigation, creating an immersive virtual environment. This innovative approach facilitates effective communication among various stakeholders involved in road maintenance, enabling integrated rehabilitation efforts and streamlining the approval and execution processes. By adopting this model, Saudi Arabia can align with international benchmarks and standards, aiming to improve infrastructure quality, ensure timely project completions, and enhance stakeholder collaboration. This paper demonstrates how the integration of BIM tools in road maintenance not only mitigates the challenges posed by the need for multiple approvals but also significantly enhances project management and stakeholder communication.

Crisis Management and Business Continuity: How New Technologies and Innovations are affecting the Transportation Sector

Eng. Simone Bernasconi
Founder & CEO
Avalle
Switzerland

Biography:

I have been on the road for over 20 years and have held various technical and senior managerial positions in the aviation, railway, government, and mobility sectors. I am an innovator, storyteller, creative engineer, strategist, and responsible leader who knows how to manage crises and ensure business continuity. Digital transformation, change management, the evaluation/implementation of new/emerging technologies, and safety/risk management are some of my areas of expertise. I have lived and worked in dozens of countries on all continents, but I am based in Switzerland. I have a daughter and am happily married.

My mindset: Simple is simply better. Innovation is not only technology. Sharing emotions is communication. A crisis can be an opportunity if you are prepared. Always be ready for the unexpected. Creativity is enrichment. Respect builds longstanding relationships. Mobility is the lifeline of the economy.

A citizen of the world who lives in Uster (Switzerland) since 2018. Father of one daughter, happily married.

Abstract:

The transportation sector faces evolving challenges in maintaining business continuity and effective crisis management amid an increasingly complex global landscape. This paper examines the impact of emerging technologies and innovations on the sector's crisis resilience and operational continuity. Key advancements, such as artificial intelligence (AI), the Internet of Things (IoT), and other edge technologies, are reshaping traditional approaches to any business segment including crisis response and risk mitigation. Innovations such as predictive analytics and autonomous systems enable proactive strategies, minimizing disruptions from unforeseen events like technical malfunctions, accidents, natural disasters, cyber-attacks, and pandemics.

The paper explores how digitalization and innovation (1) foster real-time communication, (2) enhance situational awareness, (3) support dynamic decision-making, (4) lead to quicker response times, and (5) optimize resource allocation during crises. At the same time, the fast-paced world we are living in can (1) spread information (real or fake news) within seconds, (2) the overreliance on technology and technology-induced complacency, and (3) the need to include human factor aspects in a complex technological system can back-fire due to many reasons that will be presented in this paper (e.g. lack of hands-on experience, reliance on connectivity and power, etc.).

Of course, adaptive technology frameworks offer the transportation sector (and other related industries) the agility to respond to shifting regulations, customer expectations, and environmental demands, fostering long-term business resilience. By analyzing case studies and a few industry insights, this paper underscores the importance of integrating advanced technologies into crisis management strategies to support sustainable, resilient, and efficient transportation networks in a rapidly changing environment.

Day 02: Monday 27 January 2025

Prospectives on Utilizing Sustainable Smart Maintenance in Infrastructure Projects

Prof. Moustafa Kassab
Professor
University of Waterloo
Canada

Biography:

Dr. Moustafa Kassab received his Master and PhD Degrees in Systems Design Engineering and in Civil Engineering (Infrastructure Projects / Environmental Engineering Systems), from University of Waterloo, Canada. He taught many Systems Design Engineering, Civil Engineering, and Project Management courses at the University of Waterloo, Canada; Taibah University, and UPM, Saudi Arabia; and elsewhere. He has various publications in prestigious international journals and conferences such as American Society of Civil Engineering (ASCE), Institute of Electrical and Electronics Engineers (IEEE), Canadian Society of Civil Engineering (CSCE), and others. Dr. Kassab is professional engineering expert approved by the government of Canada, and has an extensive industrial engineering experience in USA, CANADA, and Middle East. His expertise in Civil engineering and Systems designs of infrastructure projects, Operation and Maintenance, Green Buildings and Sustainability, Construction of Nano technology labs, Artificial Intelligence tools in Civil engineering fields and Infrastructure systems design. He is reviewer and referee for international journals and conferences. Dr. Kassab associates with American Society of Civil Engineering (ASCE), Institute of Electrical and Electronics Engineers (IEEE), Canadian Society of Civil Engineering (CSCE), and Project management Institute (PMI) and others. He is former CEO of Armada Engineering consulting in Canada. Currently he is faculty member affiliated with Civil engineering departments and research associate with UPM, and University of Waterloo, Canada.

Abstract:

The rise of digital technologies and data-driven innovations is transforming how infrastructure projects are managed and maintained. Smart maintenance, which leverages real-time monitoring, predictive analytics, and automation, plays an increasingly vital role in optimizing the efficiency, reliability, and longevity of infrastructure assets. This paper explores the concept of smart maintenance, its applications in infrastructure projects, the technologies driving its adoption, and the benefits and challenges it presents. It also highlights case studies to illustrate its effectiveness in different sectors of infrastructure.

Day 02: Monday 27 January 2025

Effect of Using Geocell in Paved, Unpaved Roads on Sustainability, Technology for Digitizing Roads, and Infrastructure

Eng. Ashraf Sabry
Consultant Economist
LSF
Egypt

Biography:

Consultant and economist Scientific background First: the engineering field Bachelor of Civil Engineering, Ain Shams University, 1985 AD Master of Engineering in Construction Project Management, Naval Academy - 2007 AD Second: The economic field Bachelor's degree in commercial and economic studies, Cairo University, 2004 Diploma in Financial Markets (two years), Faculty of Commerce, Cairo University - 2006 AD Diploma in Economic Feasibility Studies, Faculty of Politics and Economics, Cairo University - 2008 AD Third: The consulting field Construction Project Management Consultant, Engineers Syndicate - 2006 AD IPMA Advisory Fellowship 2008 AD Practical background Officer in the Armed Forces, Integrated Business Construction - 3 years Contractor, engineer, integrated works, two years - - General Manager of one of the largest real estate investment companies in Egypt - 20 years The achievements of this period are about 25 years 300,000 square meters of buildings, more than 50 buildings General Manager of Enberget International Company for Engineering and Petroleum Projects - 2015 AD - 2016 AD Teaching at the Russian University - 2013 AD Consulting engineer, real estate expert, feasibility studies and marketing expert. Consulted several companies in the field of real estate and real estate investment. Social and community activity Member of the Engineers Syndicate Member of the Trade Union Bite Management Engineering Society Member of the Federation of Arab Engineers Member of the Arab Institute for Operation and Maintenance Member of the German Chamber Member of the 6th of October Investors Association

Member of Al Shams Sports Club Attending a number of workshops inside and outside Egypt, holding exhibitions inside and outside Egypt, and visiting and attending Exhibitions in several Arab, African, European countries - - Former member of the Council of Engineers Syndicate, Civil Division.

Abstract:

This study explores architectural digital twinning as an advanced tool for managing and maintaining heritage buildings. It begins by introducing the concept of digital twinning and its applications in architecture, focusing on its significance for historically valuable structures. The research reviews various types of maintenance, identifying the most suitable approach for implementation within the digital twin context. It also discusses appropriate restoration methods for this technology, analyzing decision models related to preservation and maintenance processes. The study presents a methodology for assessing heritage building needs and prioritizing interventions using digital twins. Finally, the research evaluates this methodology, highlighting its advantages and limitations, and providing insights into the potential of digital twinning in efficiently preserving and managing architectural heritage.

Day 02: Monday 27 January 2025

Chairman:
Prof. Mohammed H. Albeirutty
Expert in WaterManagement
Former Professor of
Mechanical Engineering
Center of Excellence in
Desalination Technology
King Abdulaziz University
Saudi Arabia

Eng. Suhail Kattan
Utilities Plants &
Distribution Systems
Manager
King Abdullah University
of Science and Technology
(KAUST)
Saudi Arabia

Eng. Ali El Turki
Lecturer
Civil Engineering
Department
University of Benghazi
Libya

Eng. Ahmed Alghamdi
Green and Renewable
Energy Group Leader
Saudi Water Authority
Saudi Arabia

Eng. Khalid Al-habib
Chief Strategy &
Development Officer
Water Transmission Co.
Saudi Arabia

Eng. Walaa Elsrogy
General Manager of AI
and Control Department
Greater Cairo Water
Company (GCWC)
Egypt

Day 02: Monday 27 January 2025

Chairman:

Prof. Mohammed H. Albeirutty
Expert in WaterManagement
Former Professor of Mechanical Engineering
Center of Excellence in Desalination Technology
King Abdulaziz University
Saudi Arabia

Biography:

Mohammed Albeirutty is retired professor in mechanical engineering. He got his BSc and MSc degrees from Universty of Wisconsin -Milwaukee 1981, and his phD degree from University of Washington-Seattle 1987. In the past few years he focused his research work on water desalination technologies. He was the cofounder of the Center of excellence in desal. Tech. CEDT at King Abdulaziz Universty. He has many publications in peer refereed ISI journals.

Day 02: Monday 27 January 2025

Comprehensive Asset Condition Assessment Framework for VariousEquipment Types in Desalination Plants

Eng. Suhail Kattan
Utilities Plants & Distribution Systems Manager
King Abdullah University of Science and Technology (KAUST)
Saudi Arabia

Biography:

Suhail S. Kattan is a dedicated maintenance and engineering professional with over a decade of experience in overseeing complex operations across various industries, including desalination, petrochemicals, and utilities. Currently, he leads the maintenance team of the desalination plant at King Abdullah University of Science and Technology (KAUST), where he focuses on strategic planning, risk management, and driving operational excellence. His work has resulted in significant improvements in equipment reliability, service quality, and cost efficiency, saving the organization substantial resources. He holds a Bachelor's degree in Mechanical Engineering from King Fahd University of Petroleum & Minerals and is certified in Project Management (PMP) and Risk Management (PMI-RMP). He is passionate about asset management, safety, and continuous improvement, always striving to deliver the best results.

Abstract:

This paper presents a comprehensive framework for the asset condition assessment (ACA) of various equipment types in desalination plants, including rotating equipment, pressure vessels, filters, and tanks. The study outlines the development and application of detailed checklists tailored to each equipment type, ensuring a thorough evaluation of operational parameters, visual inspections, and performance metrics. The paper also incorporates an Asset Condition Assessment Priority Rating Matrix, which aids in the prioritization of maintenance activities based on condition and performance rankings. The framework is supported by best practices in asset management and condition assessment from several established guidelines and case studies.

Day 02: Monday 27 January 2025

Evaluation of Pipe Alternatives for Maintenance and Replacement in the Great Man-Made River Project-Libya

Eng. Ali El Turki
Lecturer
Civil Engineering Department
University of Benghazi
Libya

Biography:

Ali EL-Turki is a lecturer in the Civil Engineering Department at the University of Benghazi, specializing in water supply engineering. With over 10 years of experience, his research primarily focuses on water engineering planning and management. Ali's dedication to his field has earned him the honor of being a speaker at OMAINTEC 2024 in Cairo.

He holds a Master's degree in Civil Engineering from Colorado State University, USA, and is currently pursuing a second Master's in Engineering Management at the Libya Academy for Postgraduate Studies. In his current studies, Ali is focusing on the application of engineering management tools and techniques in the water engineering sector.

Abstract:

The Great Man-Made River Project has relied on prestressed concrete pipes since 1990. However, these pipes have experienced significant damage due to corrosion and hydraulic factors, necessitating extensive maintenance or replacement. The required maintenance work involves heavy machinery and specialized equipment, some of which are currently unavailable. To address these challenges, the project management is considering lightweight pipes with advanced technical specifications as alternatives. The project emphasizes ease of operation and maintenance as critical success factors, prompting the evaluation of alternative pipe materials such as steel, cast iron, and glass fiber reinforced plastic (GRP) pipes. Given the project's scale, GRP pipes have emerged as a promising option due to their lightweight nature and ability to withstand internal and external pressures. To identify the optimal replacement for the damaged pipes, the project employs the Multi Criteria Decision Analysis (MCDA) technique to compare cast iron, prestressed concrete, steel, and GRP pipes. Financial and technical evaluations indicate that GRP pipes offer superior performance compared to the other alternatives. Consequently, GRP pipes are recommended as the preferred choice for maintenance and replacement in the Great Man-Made River Project.

Day 02: Monday 27 January 2025

Integration of AI Solutions in Desalination Operation Optimization

Eng. Ahmed Alghamdi
Green and Renewable Energy Group Leader
Saudi Water Authority
Saudi Arabia

Biography:

Group leader of clean and renewable energy in WTIIRA research center of SWA .Chemical engineer with Master in waterdesalination. 16 years of experiance in water and renewable energy research have more than 20 published paper and 6 patent in watersector and renewable enrgy

Abstract:

Automation and AI-driven operation prediction are becoming crucial in improving the management of desalination plants, as traditional manual monitoring often fails to detect issues early enough to prevent costly inefficiencies. Membrane biofouling, for instance, is a significant challenge for plants utilizing reverse osmosis (RO) technology. Addressing this problem is essential for reducing maintenance costs, improving operational efficiency, and extending membrane lifespan.

This paper explores how integrating AI-based real-time optical water quality sensors, such as the Spectromarine, offers a novel solution for monitoring and managing feedwater quality. The Spectromarine sensor provides continuous data on organic content and biomass levels, offering early warnings of potential biofouling. These insights allow for preventive actions, optimizing pre-treatment and membrane cleaning processes. By automating the monitoring system and utilizing predictive AI, desalination plants can significantly reduce energy consumption, minimize chemical use, and improve overall performance.

Evaluations conducted in collaboration with WTIIRA-SWA and the Institute of Solid State Physics, University of Latvia, highlight how this integration extends membrane lifespan, lowers operational costs, and enhances the overall economic performance of desalination plants. AI and automation in desalination operations not only streamline management but also ensure greater plant reliability and cost-efficiency in the long term.

Data Integration of Plant Equipment's and Spare Parts and Impact of that on the Cost Computing in the Seawater

Eng. Khalid Al-habib
Chief Strategy & Development Officer
Water Transmission Co.
Saudi Arabia

Biography:

Engr. Khalid M. Alhabib is the Chief strategy and Development Officer in Water Transmission Company, WTCO, and Chairman of the Council Advisory Committee of Chemical Engineering Department in KSU, He holds M.Sc of MBA in Business Administration 2009, Manamah, Kingdom of Bahrain. Alhabib originally holds B.S. of Chemical Engineering from King Saud University, College of Engineering. With a wide-ranging experience of 25+ years across the Power & Water sector and Investment, He have strong exposure in Strategy Planning, Privatization & transaction, Team Leadership, Business Development, Supply Chain Management, Relationship Building, Business Process Re-engineering, Investment & Business Growth. My efficiency lies in devising strategies aimed to enhance overall organizational growth and sustained profitability, Leading the establishment and launch of the most important government companies like AWT, WTCO.

Before he joined WTTCO, Alhabib had worked as a PPP Senior Advisor & Water Sector privatization Manager in Ministry of Environment, Water & Agriculture (MEWA) KSA.

In addition, functioned as a Legal Representative of local unit for one international firm (Sadelmi Power Co.) with all powers of attorney.

Abstract:

The purpose of this paper is to discuss the method of data integration between the AKZ numbering and classification system; "Plant Equipment Coding", and MESC; Material and Equipment Standard Code, for spare parts. The new results achieved is more cost computing accuracy and precision. In conclusion, there two method; method one for existing plant and method two for new plant construction and both of the methods are important to be implemented on enterprise resource planning system in the seawater desalination sector for better cost computing precision.

Day 02: Monday 27 January 2025

Applications of Artificial Intelligence and Early Warning Systems in the Water Sector

Eng. Walaa Elsrogy
General Manager of AI and Control Department
Greater Cairo Water Company (GCWC)
Egypt

Biography:

• More than 16 years of experience in automatic control and SCADA systems.
• She was a speaker at the OMAINTEC conference in 2023.
• Implementing the first SCADA system based on artificial intelligence in the water sector
• As a scientific researcher, she has published five scientific papers in highly rated scientific journals and conferences such as IEEE.
• She was selected as a technical representative for Cairo at the UNESCO conference on climate change, where she delivered a lecture on the problems and proposed solutions to address climate change using artificial intelligence technology.
• Designed many projects, prepared specifications and schedules, developed operational plans, and monitored and measured the implementation of operations

Abstract:

This session examines the role of Artificial Intelligence (AI) and Early Warning Systems in the water sector, focusing on surface water stations. We will introduce AI and its stages, highlighting its applications in early detection of equipment failures and monitoring Nile water levels and quality in Cairo. The discussion aims to demonstrate how AI can enhance water management and promote sustainability.

Day 02: Monday 27 January 2025

10th Workshop:
Enhancing Infrastructure Asset Management Through Stakeholder Dynamics and Collaboration

Room 1
15:00 - 16:00

Eng. E. Kingkof Kofi Opoku-Ohemeng

Asset Management Leader (Senior Manager)
Royal Commission of Yanbu & Jubail
Saudi Arabia

Biography:

Kingkof is a seasoned expert in asset management and infrastructure development, with over 25 years of global experience across industries such as transportation, water, energy, oil and gas, and mega infrastructure projects. A Chartered Engineer, Chartered Project Manager, and certified Asset Management Auditor and Assessor, he is a Fellow of both the IAM and CIHT, and a member of CIOB and WPiAM.

Currently leading Assets and Facilities Management for the Royal Commission for Yanbu, Kingkof drives the Commission's transformation into a robust asset management organization. He oversees the entire asset lifecycle management process, ensuring the development and implementation of comprehensive strategies, policies, and procedures to enhance efficiency and sustainability.

An accomplished author, Kingkof contributed to the book "Building a Body of Knowledge in Project Management in Developing Countries" as the author of Chapter 12: "Project Stakeholder Management in Developing Countries."

Kingkof has held leadership roles with KIS Plus, AECOM, and Colas Ltd, delivering large-scale projects and pioneering asset management solutions worldwide. His work combines technical excellence with strategic foresight to maximize client investments and drive sustainable development.

Workshop Contents & Objectives

This workshop will provide a comprehensive exploration of stakeholder dynamics in infrastructure asset management, focusing on strategies to foster collaboration, improve communication, and align practices with international standards such as ISO 55001 and IAM Anatomy. Designed as an interactive platform, the session will enable participants to engage in meaningful discussions and share knowledge while achieving the following objectives:

- Understand the critical role of stakeholder engagement in asset management success.
- Explore tools and techniques for resolving competing priorities and fostering sustainable outcomes.
- Learn how to leverage digitization and innovation to enhance operational efficiency and resilience.
- Examine case studies to identify actionable best practices in stakeholder collaboration for large-scale infrastructure projects.

This workshop aims to empower participants with the knowledge and skills needed to enhance collaboration, drive innovation, and achieve excellence in infrastructure asset management.

Who Should Attend:

- Asset management professionals.
- Facility management specialists.
- Stakeholders involved in infrastructure projects.
- Strategic planners and sustainability experts.
- Professionals seeking to deepen their knowledge in asset management and stakeholder collaboration.

Day 03

28 January 2025

Day 03: Tuesday 28 January 2025

2 PARALLEL SESSIONS

Session 06:	Hall A
Strategic Asset Planning and Performance Optimization	09:00 - 10:15

Keynote Speaker:
Dr. Álvaro Vale e Azevedo
Head of Buildings Department
Lnec - National Laborator
for Civil Engineering
Portugal

Chairman:
Prof. Shabab Alhammadi
Chairman and Easy Energy
Companies & Consulting SA
Switzerland

Eng. Ondrej Stejskal
Senior Project Manager
Logio s.r.o.
Czech

Prof. Adolfo Crespo Marquez
Professor
Universidad De Sevilla
Spain

Eng. Majed Aljeshi
Senior Process Engineer
Saudi Aramco
Saudi Arabia

Eng. Shukri Habib
Managing Director
Qualiserv
Qatar

Day 03: Tuesday 28 January 2025

Keynote Speaker:

Maintenance and Asset Management: Evolution, Big Data Integration, Digital Transformation and Future Challenges in the AECO Sector

Dr. Álvaro Vale e Azevedo
Head of Buildings Department
Lnec - National Laborator for Civil Engineering
Portugal

Biography:

Álvaro Vale e Azevedo graduated in Civil Engineering in 1978 at Instituto Superior Técnico (IST) in Lisbon. In 1979, he joined LNEC (National Laboratory for Civil Engineering) in the Structural Analysis Division of the Structures Department. In 1986 he obtained his PhD with the thesis "Static and dynamic analysis of building structures". In 1987 he received the Manuel Rocha Research Award for his thesis work. Between 1979 and 2007, he worked in the Structures Department at LNEC, dedicating himself to the development of mathematical models for the static and dynamic analysis of structures, having also developed activity in the analysis of behavior, pathology and rehabilitation of structures. In 2007 he moved to LNEC's Construction Quality Center, where he dedicated himself to quality management, being responsible since 2007 for the coordination of all the Auditing Groups of LNEC Quality Mark for Construction Projects Certification. He has been involved in the certification of construction projects with the LNEC Quality Mark since 1992. In 2013 he moved to the Buildings Department, having been appointed in 2014 head of the Economics, Management and Construction Technology (NEG) Division. In February 2023 he has been appointed head of the Buildings Department. His activity at Buildings Department has addressed the following topics: certification of construction projects with the LNEC Quality Mark; economic evaluation and provision of cost and income reference values for construction works; asset valuation of real estate; certification and evaluation of the quality of primary construction elements and construction systems; safety in construction works; planning and control of construction execution works; methodology for reviewing construction contract prices; construction work measurement rules; construction information and management systems; tender and execution procedures for construction projects; management procedures applicable to assets operation and maintenance; life cycle cost (LCC) analyzes of buildings; cost-benefit analysis associated with the implementation of different constructive solutions; physical asset management. Since 2019 he is a member of OMAINTEC (Operation & Maintenance Conferences in the Arab Countries). He has participated in several research programs. He has been teaching at the University Instituto Superior Técnico (IST), a special class of Quality, Safety and Environment in Construction (QSAC) of the integrated master's degree in Civil Engineering and the integrated master's degree in Environmental Engineering. He supervised several master's and doctoral theses. He organized and participated in numerous dissemination and training actions, in Portugal and abroad, giving courses, seminars, conferences and lectures. The activities described resulted in the elaboration of more than seven hundred publications: articles in national and international scientific journals; papers in national and international scientific and technical conferences; LNEC reports; LNEC Technical Notes. He has been active in connection with associations, commissions and working groups, namely the Portuguese Association of Engineers, the Portuguese Association of Structural Engineering (APEE), the Portuguese Structural Concrete Group (GPBE), the Portuguese Society of Earthquake Engineering (SPES)

Day 03: Tuesday 28 January 2025

Abstract:

This paper offers a comprehensive review of Maintenance and Asset Management, tracing their evolution over the past decades and examining significant scientific advancements, specifications, and standards. A key focus is the integration of Big Data, detailing its collection, management, and transmission to enhance decision-making, predictive maintenance, and asset performance. Additionally, the lecture addresses the digital transformation of the Architecture, Engineering, Construction, and Operations (AECO) sector, discussing innovative technologies and methodologies for improved efficiency, cost reduction, and sustainability. Future challenges within the AECO sector, such as technological, operational, and management issues, will also be analyzed. The paper aims to provide professionals with the knowledge and strategies needed to tackle these challenges and leverage opportunities presented by Big Data and digital transformation, ensuring the AECO sector remains at the forefront of technological innovation and operational excellence.

Day 03: Tuesday 28 January 2025

Chairman:

Prof. Shabab Alhammadi
Professor
Princess Nourah bint
Abdulrahman University (PNU)
Saudi Arabia

Biography:

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec suscipit quis ante sed pulvinar. Sed faucibus quam ligula, sed ornare ipsum facilisis et. Donec id placerat elit. Sed euismod malesuada enim in iaculis. Quisque viverra tempor magna. Fusce feugiat tincidunt ipsum semper pulvinar. Vivamus aliquet massa consectetur elit semper tempus. Interdum et malesuada fames ac ante ipsum primis in faucibus. Maecenas ac aliquam justo, eget viverra tortor. Pellentesque vestibulum fringilla lectus a pulvinar. Ut sagittis quam diam, quis tempus est facilisis sit amet. Nunc faucibus eros sit amet scelerisque lacinia. Donec non tristique leo. Ut congue tellus porttitor tortor posuere, ut sagittis ex pulvinar.

Cost Optimal Asset Replacement Plan Case Study

Eng. Ondrej Stejskal
Senior Project Manager
Logio s.r.o.
Czech

Biography:

After completing his engineering studies at the Czech Technical University in Prague, where, among others, he studied an exchange MBA course, he participated and managed number of international projects in the field of supply chain management, maintenance and asset management. Ondrej is also a member of the Asset Management committee and working group for Sustainability within the Asset Management of the European Federation of National Maintenance Societies.

Abstract:

This article describes a case study of application of decision model when setting up plan for renewal of assets. This particular case is dedicated to material handling equipment (AGV) while the principle is applicable for any type of asset. The first part of the article shows project situation and premises. The second part describes used methodology for project solution. In the third part the methodology is applied and the project results are presented. The article is finished by conclusion of the project as well as evaluation of usage of the methodology.

Day 03: Tuesday 28 January 2025

Generation of Solutions Catalog for Early-Stage Asset Lifecycle Decision Making
Prof. Adolfo Crespo Marquez
Professor
Universidad De Sevilla
Spain

Biography:

Adolfo Crespo Márquez is currently Full Professor at the School of Engineering of the University of Seville, and recently Head of the Department of Industrial Management. He holds a Ph.D. with Honors in Industrial Engineering from this same University.

He is included in the Stanford University's list of world top-scientists in 2022 (doi: 10.17632/btchxktzyw.5) and he received the Spanish Maintenance Award from the Spanish Maintenance Association (AEM) in 2020. Prof. Crespo is the author of 8 books and Editor of 5 books with Springer, Aenor, IGI Global and INGEMAN, about maintenance, warranty, supply chain and assets management.

Professor Crespo is Fellow and Director of ISEAM (International Society of Engineering Assets Management), Editor-in-Chief of the Springer Book Series Engineering and Asset Management Review. He also leads the SIM (Sistemas Inteligentes de Mantenimiento) research group related to maintenance and dependability management and has extensively participated in many engineering and consulting projects for different companies.

Abstract

This paper highlights the importance of digital transformation for asset management when applied across every stage of the asset lifecycle. To achieve this, a thorough assessment of the entire asset lifecycle is essential, emphasizing the identification of key indicators that furnish valuable data for decision-making at each stage. Most of digital IAMS (Intelligent Asset Management Solutions) are focused on the O&M (operations and maintenance) stage of assets lifecycle, however, in this paper we propose a solution in the early stages of the lifecycle, that could be use either for manufacturers or asset buyers/owners. In this study, we present a solution for analysing asset needs and their future operations and maintenance plans with the aim of guiding asset acquisition decision-making based on maintenance service, type of operation, and fleet of assets size. The proposed approach utilizes discrete event simulation to predict the levels of availability for a fleet of assets under a specific demand and maintenance service type. This type of solutions guides the path to servitise not only O&M, but earlier stages of assets lifecycle, and clarify the interaction between companies that acquire valuable assets and the asset's manufacturers by defining the needs and helping to balance the capital and operational investments.

Day 03: Tuesday 28 January 2025

Sustaining Crude Stabilizer Performance & Optimize Maintenance Frequency by Leveraging Digital Simulation

Eng. Majed Aljeshi
Senior Process Engineer
Saudi Aramco
Saudi Arabia

Biography:

Majed A. Al-Jeshi is a senior Process Engineer for crude oil processing facilities in the process and control systems department in Saudi Aramco. His responsibilities include providing technical support to a corporate crude quality program, capital projects, technology evaluation & deployment, and facilitating the fourth industrial revolution for crude oil facilities. He holds a Bachelor of Science in chemical engineering from Colorado State University (Fort Collins, CO, USA)

Abstract:

Saudi Aramco team has conducted a troubleshooting activity to assess challenges impacting crude stabilization efficiency leading to an increase in the maintenance frequency of crude stabilizers. The technical team findings suggested stabilizer column reboiler tubes were continuously getting plugged with salt and corrosion products forcing stabilizer to be take temporarily out of service for maintenance activities. By leveraging digital simulations capabilities, it was determined that residual water in crude was evaporating depositing salt contents on reboiler tubes and recommended solution will be to increase direct steam injection flow rate. The recommendation was validated through an extended field test and it successfully sustained crude stabilizer performance as well as optimizing column maintenance frequency.

Day 03: Tuesday 28 January 2025

Implementing ISO 41001: Transitioning from Operations and Maintenance Contracts to Total Facility Management Performance-Based Contracts in KSA

Eng. Shukri Habib
Managing Director
Qualiserv
Qatar

Biography:

Eng.Shukri is an expert consultant and trainer in facility and quality management who is heavily involved in the facility management industry for more than 22 years.
He is an expert trainer:
- Facility Management (ISO41000, IFMA)
- Asset Management (ISO55000)
- Risk Management
- Sustainability Management (GRI)
- Quality Management (Lean, Six Sigma, Kaizen, DMAIC, Kanban, TQM, SIPOC)
- Health and Safety (ISO 45000, OSHA, NIOSH)
- Shukri is also an approved instructor in the following institutions:
- The Order of Engineers in Beirut
- The Jordan Engineers Association in Amman
- The American University of Cairo in Cairo
- The training center of King Saud University in Riyadh
- The Saudi Experts Institute for Training and Development in Riyadh
- The Qatar Society of Engineers in Doha, and other regional training centers.

Abstract:

Facility management (FM) in Saudi Arabia has experienced significant transformation over the past decade, driven by urbanization, economic diversification, and the government's Vision 2030 initiative. As of 2023, the FM market in Saudi Arabia is valued at approximately $7.2 billion and is projected to grow at a compound annual growth rate (CAGR) of 10.3% from 2024 to 2030 (Source: Market Research Future, 2023). This growth is largely attributed to increased investments in infrastructure, commercial real estate, and public facilities, underscoring the critical role of FM in maintaining efficiency and operational excellence in various sectors. The traditional FM landscape in Saudi Arabia has predominantly relied on operations and maintenance contracts, which often emphasize short-term cost efficiency over long-term performance outcomes. A recent survey indicated that 60% of facility managers reported challenges associated with fragmented service delivery and lack of accountability in these contracts (Source: FM Insights, 2023). This has prompted a shift towards more integrated and performance-based approaches, aligning with international standards such as ISO 41001:2018, which emphasizes improved service delivery and strategic alignment with organizational goals.

With the growing recognition of FM's importance, the Saudi government has initiated several programs aimed at enhancing the capabilities of FM professionals and integrating innovative practices. The establishment of training programs and certifications, along with partnerships with international FM organizations, reflects a commitment to elevating the standards of facility management in the country. As of 2023, 75% of FM companies are actively pursuing ISO certifications, showcasing a proactive approach to adopting global best practices (Source: Saudi Facility Management Association, 2023). This evolution in the FM sector not only supports economic diversification but also aligns with sustainability goals set forth in Vision 2030, promoting more efficient use of resources and improved service quality across facilities.
This paper aims to explore the transition to performance-based contracts in Saudi Arabia through the lens of ISO 41001:2018. The structure includes an understanding of the standard, the current state of contracts, the benefits of the shift, implementation steps, challenges, and future implications.

Day 03: Tuesday 28 January 2025

Session 07:
Role of Training and Education in Empowering Asset and Facility Management

Hall B
09:00 - 10:15

Keynote Speaker:
Prof. Zaher Kyle
President of the British
Academy for eLearning
United Kingdom

Chairman:
Dr. Isam Kabbani
Owner & CEO
Al Kabbani Engineering
Consulting Office
Saudi Arabia

Prof. Mansour Benzahi
Professor
University of Ouargl
Algeria

Eng. Hamid Yagoub
Senior Consultant ISO
Standard and Project
Management
Engineering Science Institute
for Training ESI
Saudi Arabia

Dr. Asmaa Nusairi
Director of Continuous
Education Center
Assistant Professor
in Management
University of Sharjah
United Arab Emirates

**Prof. Hossam
Elborombaly**
X-head Of Architecture
Department
Ain Shams University
Egypt

Day 03: Tuesday 28 January 2025

Keynote Speaker:

FAM Industry Future Needs in Education and Training

Prof. Zaher Kyle
President of the British Academy for eLearning
United Kingdom

Biography:

Prof. Kyle; is a UK graduate, with a PhD from Salford University 1989, in Civil /Infrastructure Engineering and an MSC from Queens University 1986.
• He is a professional engineer, worked in two major fields ; as a senior consultant in "Infrastructure Engineering and Management" and as a top academic management and professor, lead two universities and as a professors for 34 years.
• His professional work included analysis and design of different infrastructure projects (ports, water, stormwater and sewage networks, advanced modelling,...etc); also as trainer for professional engineers and technicians in municipal and project management and maintenance.
• One of the unique areas is the GIS DSS (Geographic Information System and Decision Support System) for infrastructure and superstructure, including "Macro and Micro planning".

Abstract:

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Day 03: Tuesday 28 January 2025

Chairman:

Dr. Isam Kabbani
Owner & CEO
Al Kabbani Engineering Consulting Office
Saudi Arabiaa

Biography:

Qualifications Summary:
Accomplished and proven leader in Engineering, Construction Management, Operation and Maintenance, Member of many engineering councils, including
Member of the National Project Support Program Council and Vice Chairman of the Executive Committee for Facilities Management, community deputy Chairman of value management organization in KSA and Owner of Engineering and Project Management Consultancy office.

Professional Experience:
Thirty years of professional experience at General Directorate of Military Works in Ministry of Defense & Aviation, Managed many a Major projects.

Publications:
Participated in numerous scientific conferences and forums and has published many scientific papers.
Authored two books:
• Economics of facilities (Life Cycle Costs)
• Legalization and standardization of Operation & Maintenance

Day 03: Tuesday 28 January 2025

Towards a Training Program for Developing Leadership Skills for Facility Managers at Sonatrach, Algeria

Prof. Mansour Benzahi
Professor
University of Ouargl
Algeria

Biography:

Prof. Mansour Benzahi is a highly respected academic at the University of Ouargla, Algeria, where he serves as a Professor and Director of the Laboratory of Psychology and Quality of Life. He earned his PhD in Work and Organizational Psychology from the University of Constantine in partnership with the University of Bordeaux 2, France, in 2007.

Throughout his distinguished career, Prof. Benzahi has held various leadership roles, including Scientific Advisor to the Programming and Evaluation Committee for University Scientific Research at the Algerian Ministry of Higher Education and Scientific Research, Head of the Department of Psychology, Vice Dean of the Faculty of Humanities and Social Sciences, and Head of the Quality Assurance Cell for Higher Education at his university.

An accomplished mentor, he has supervised numerous master's and doctoral theses in psychology and educational sciences, contributing significantly to the academic growth of his students. Prof. Benzahi is also an active researcher, with many articles published in national and international journals. He has participated in a wide range of conferences and seminars both nationally and internationally, sharing his expertise and insights.

Additionally, he is a member of the International Association of French-speaking Work Psychology (AIPTLF), further connecting him with the global academic community. Prof. Mansour Benzahi continues to make impactful contributions to the field of psychology and education.

Abstract:

This article describes a case study of application of decision model when setting up plan for renewal of assets. This particular case is dedicated to material handling equipment (AGV) while the principle is applicable for any type of asset. The first part of the article shows project situation and premises. The second part describes used methodology for project solution. In the third part the methodology is applied and the project results are presented. The article is finished by conclusion of the project as well as evaluation of usage of the methodology.

Day 03: Tuesday 28 January 2025

The Role of AI-Powered Training in Enhancing Compliance with ISO 55001 Asset Management Standards

Eng. Hamid Yagoub
Senior Consultant ISO Standard and Project Management
Engineering Science Institute for Training ESI
Saudi Arabia

Biography:

With over 20 years of experience in the oil and gas industry, including roles as a project manager and general manager of contractor companies, this professional holds a B.Sc. in Civil Engineering and an M.Sc. in Construction Management from Sudan University of Science & Technology. He has served as General Manager of Ashkal Engineering and Asawer Civil & Infrastructure (Sudapet), and as a Senior Engineer at White Nile Petroleum Operating Company. A consultant and trainer in the Gulf, he is a member of various engineering bodies. He has presented papers at international conferences in Riyadh and Kuwait, focusing on project quality plans and training program development.

Abstract:

This paper explores how AI-enhanced training can improve compliance with ISO 55001 standards for asset management. The paper outlines how technology can enhance training quality and efficiency through interactive customization, targeting individual trainee needs. It emphasizes the significance of integrating AI in developing technical and administrative skills, achieving strategic goals through effective asset management. Using case studies from the oil and gas sector, the paper demonstrates the benefits achieved, including a 25% increase in compliance, a 20% reduction in operational costs, and a 30% improvement in long-term asset performance.

Day 03: Tuesday 28 January 2025

The Evolution of Continued Education with the Future Role of Artificial Intelligence: A Case Study of the University of Sharjah

Dr. Asmaa Nusairi
Director of Continuous Education Center
Assistant Professor in Management
University of Sharjah
United Arab Emirates

Biography:

Dr. Asmaa Nusairi is a distinguished expert in the UAE's knowledge economy and a leading advocate for the transition to Industry 4.0. With a rich and prestigious career spanning government and private sectors in aviation and education, Dr. Nusairi is globally recognized as a prominent speaker, skilled researcher, and published author.

One of her outstanding strengths is empathy, which she seamlessly integrates into her professional journey. Dr. Nusairi's empathetic approach has been a driving force behind her pivotal contributions as a lead assessor in multiple Government Excellence programs at both the Federal and Emirate levels. Her ability to understand and connect with individuals and teams has significantly influenced governance and performance excellence.

Currently, Dr. Nusairi serves as the Director for the Center of Continuing Education and Professional Development and the Director for the Office of Scientific and Consultation Services. Additionally, she holds the position of Assistant Professor at the University of Sharjah's Business Management College, specializing in Management. Beyond her professional pursuits, Dr. Nusairi embraces life with a unique perspective, valuing passion and joy as essential components of a fulfilling existence. Her philosophy reminds us that we only live once, and living with passion and joy makes each moment more than enough.

Abstract:

The continuous evolution of education is crucial in a rapidly changing world driven by technological advancements and the growing complexity of global challenges. This paper explores the transformative role of artificial intelligence (AI) in shaping the future of continuous education. By integrating AI into educational frameworks, institutions can provide personalized learning experiences, enhance accessibility, and foster lifelong learning opportunities. The study examines current trends, potential benefits, and challenges associated with AI implementation in education. It also envisions future scenarios where AI plays a pivotal role in redefining educational paradigms, ultimately contributing to a more adaptive, efficient, and inclusive educational landscape.

Day 03: Tuesday 28 January 2025

Key Performance Indicators (KPIs) and Digital Maintenance (CMMS) for Facility Management

Prof. Hossam Elborombaly
X-head Of Architecture Department
Ain Shams University
Egypt

Biography:

Professor and Head of the Department of Architectural Engineering - Faculty of Engineering - Ain Shams University (formerly). Winner of the Arab Knight Award as one of the most prominent Arab figures who have achieved global successes - from the Arab Investors Union in Egypt - (2020). He received the Distinguished Architect Award in Egypt - from the Canadian Chamber of Commerce in coordination with Smart Vision Egypt (2020).Winner of the Bronze Award for the Best Architectural Project in the World for the year (2019) for the project (Development of Sayyida Aisha Square) from the Community Foundation (Livecom.Ability) in Rome - Italy.

He received the Arab Award for Distinguished Maintenance - Engineer of the Year for the year 2017 from the Arab Institute for Operation and Maintenance in Beirut from the President of the Republic (2017). Member of the Board of Trustees of the Arab Council for Operation and Maintenance (OMAINTEC). Consultant for the International Maintenance Association (IMA) in Lugano, Switzerland.Chairman of the specific committee to establish the foundations and standards for restoration, maintenance and reuse of heritage buildings.

Chairman of the Egyptian Code Committee for Operation and Maintenance of Public and Heritage Buildings at the Ministry of Housing. Chairman of the Unified Arab Code Committee for Operation and Maintenance of Public and Heritage Buildings at the League of Arab States. Rapporteur of the Maintenance and Facilities Management Committee of the Egyptian Society of EngineersHe won the second prize for best design for the Wardian Mosque in Alexandria (1981).

He won the fourth prize for re-planning the Marsa Abu Abbas neighborhood in Alexandria (1982). Consultant for many contracting companies specialized in the field of maintenance and operation

Abstract:

This paper explores the concept of Key Performance Indicators (KPIs), detailing their definition, purpose, significance, and various benefits. It also categorizes different types of KPIs, including financial, operational, and customer-focused indicators, while providing examples to illustrate their application. Additionally, the paper clarifies the distinctions between KPIs and metrics, as well as between performance indicators and Objectives and Key Results (OKRs). It discusses how OKRs and KPIs can effectively complement each other in goal setting and measurement, and outlines the process for determining appropriate KPIs, considering various factors essential for their selection.

Furthermore, the paper examines the role of the Corporate Maintenance Management System (CMMS) in facility management, highlighting the system's benefits in enhancing maintenance operations and overall facility management practices. It addresses how a CMMS enhances worker productivity and minimizes unplanned equipment downtime by facilitating efficient maintenance scheduling and fault tracking. The capabilities of the CMMS in generating customized reports, analyzing data to identify patterns and trends, and aiding in informed strategic decision-making are also discussed.

The paper emphasizes the critical importance of implementing preventive maintenance through the CMMS and its ability to integrate with other systems, such as Human Resource Management Systems and Warehouse Management Systems. Additionally, it outlines strategies for effectively training employees on the CMMS, addresses the challenges encountered during implementation, and suggests appropriate solutions. Finally, the paper highlights the CMMS's contributions to supporting sustainability initiatives within facility management.

Day 03: Tuesday 28 January 2025

11ᵗʰ Workshop:
Optimizing Asset Performance: The Strategic Integration of Smart Power Transformers in the Saudi Arabia Electricity Network

Room 1
10:25 - 12:25

Eng. Ayyoub Hourani

Design & Engineering Manager
Saudi Power Transformer Company (SPTC)
Saudi Arabia

Biography:

Ayyoub Hourani, born on June 17, 1987, in Amman, Jordan, is a distinguished professional with a robust academic background and extensive experience in the field of electrical engineering. He earned his Master of Science degree in Electrical Power Engineering from King Fahd University of Petroleum & Minerals (KFUPM) in Dhahran, Saudi Arabia, in 2017, following his completion of a BSc in Electrical Engineering at the University of Jordan in 2010. Currently nearing the completion of his Ph.D. in Electrical Engineering at KFUPM, Ayyoub serves as the Design & Engineering Manager at the esteemed Saudi Power Transformers Company (SPTC) in Dammam, Saudi Arabia. With over 14 years of dedicated experience in the realm of transformers engineering, he brings a wealth of knowledge and expertise to his role, demonstrating a deep commitment to excellence in his field.

Eng. Mahmoud Elsayed

Control and Protection Design Lead
Saudi Power Transformer Company (SPTC)
Saudi Arabia

Biography:

Mahmoud Elsayed, born on September 24, 1989, in Sharqiah, Egypt, is a seasoned professional with a solid foundation in electrical engineering. He obtained his Bachelor of Science degree in Electrical Engineering from Zagazig University in Egypt in 2012. Currently serving as the Control and Protection Design Lead at the prestigious Saudi Power Transformers Company (SPTC) in Dammam, Saudi Arabia, Mahmoud is a distinguished PMP® Certified professional. With over 12 years of hands-on experience in the fields of LV/MV switchgears and transformers engineering, he has demonstrated a profound understanding of complex systems and a proven track record of delivering high-quality solutions. Mahmoud's commitment to excellence and his expertise make him a valuable asset in the realm of electrical engineering.

Day 03: Tuesday 28 January 2025

Workshop Contents & Objectives

This workshop aims to delve into the strategic integration of Smart Power Transformers within the Saudi Arabia Electricity Network to optimize asset performance. Participants will explore the latest advancements in transformers technology and how they can be effectively utilized to enhance the efficiency, reliability, and sustainability of the electricity network.

Workshop Motivation:
The strategic integration of Smart Power Transformers in Saudi Arabia's electricity network can significantly optimize asset performance by enhancing grid reliability, efficiency, and enable real-time monitoring, ultimately leading to a more reliable electricity network. Smart Power Transformers offer advanced functionalities such as real-time monitoring and predictive maintenance, which are crucial for modernizing the grid infrastructure in response to increasing energy demands. This integration can lead to reduced operational costs, improved energy efficiency, and enhanced grid stability. By leveraging these smart technologies, utilities can better minimize outages, paving the way for a sustainable energy future that aligns with Saudi Arabia's Vision 2030 goals.

Who Should Attend:

Open to those who are interested in power transformers subject.

Day 03: Tuesday 28 January 2025

2 PARALLEL SESSIONS

Session 08:
Innovative Asset and Facility Solutions for Enhanced Resilience

Hall A
10:25 - 11:25

Chairman:
Prof. Adolfo Crespo Marquez
Professor
Universidad De Sevilla
Spain

Prof. Claudio Rolandi
Principal
Academia s.a.s.
Italy

Eng. Hussameddin Alzaatreh
Operations Director
ACES
Saudi Arabia

Eng. Mohammad Abu Afifeh
CEO
Conceliare
Jordan

Dr. Mohsen Alamir Alkady
Chairman
Misr Foundation for Science and Technology Research
Egypt

Day 03: Tuesday 28 January 2025

Chairman:

**Prof. Adolfo
Crespo Marquez**
Professor
Universidad De Sevilla
Spain

Biography:

Adolfo Crespo Márquez is currently Full Professor at the School of Engineering of the University of Seville, and recently Head of the Department of Industrial Management. He holds a Ph.D. with Honors in Industrial Engineering from this same University.

He is included in the Stanford University's list of world top-scientists in 2022 (doi: 10.17632/btchxktzyw.5) and he received the Spanish Maintenance Award from the Spanish Maintenance Association (AEM) in 2020. Prof. Crespo is the author of 8 books and Editor of 5 books with Springer, Aenor, IGI Global and INGEMAN, about maintenance, warranty, supply chain and assets management.

Professor Crespo is Fellow and Director of ISEAM (International Society of Engineering Assets Management), Editor-in-Chief of the Springer Book Series Engineering and Asset Management Review. He also leads the SIM (Sistemas Inteligentes de Mantenimiento) research group related to maintenance and dependability management and has extensively participated in many engineering and consulting projects for different companies.

Day 03: Tuesday 28 January 2025

An Innovative Resilience Assessing for Critical Infrastructures Using the Lean Methodology

Prof. Claudio Rolandi
Principal
Academia s.a.s.
Italy

Biography:

Graduated in Nuclear Engineering at the Polytechnic of Milan in 1980, he was working for Italian Navy, Philips, Parke Davis and Festo both as industrial engineer and as senior consultant for many international organizations. He was also Italian representative in CEN (European Committee for Standardization) for Technical Committees Maintenance and Management Consulting and former President of ISPE (International Society of Pharmaceutical Engineers) Italy Affiliate. He was professor of "Design and Management of Industrial Facilities" in SUPSI-DTI and Responsible of Advanced Studies Masters. Now he is consultant for some international companies and member of IMA.

Abstract:

One of the results of the European "Smart Resilience" project was to provide a new methodology to assess and manage the resilience of critical infrastructures, i.e. their ability to cope with possible scenarios or adverse events that can potentially lead to significant disruptions in its availability.
Lean Thinking, on the other hand, is a management style that aims to reduce waste to create excellent, standardized and low-cost processes, making it adaptable to all sectors and contexts. Its application in the analysis of complex processes, such as the infrastructures, can be an effective optimization tool.
Starting from the considerations made on the prevention of risky events, some significant cases will be examined in order to increase the level of prevention, reduce recovery times and improve performance following the actions taken.

Day 03: Tuesday 28 January 2025

Transforming Telecom Infrastructure Operations: A Vendor-Agnostic, Multi-Telecom Integrated OSS/NMS Platfor for Enhanced MNO/Towerco Passive Network Operations

Eng. Hussameddin Alzaatreh
Operations Director
ACES
Saudi Arabia

Biography:

Dynamic Operations Director with 18 years of progressive experience in telecom infrastructure, managed services, and energy management. Proven track record of transforming operations through digitization, automation, and advanced analytics, leading to significant improvements in efficiency and cost savings. Expertise in managing large-scale projects across multi-OEM networks, driving strategic initiatives for operational excellence, and delivering customer-focused solutions. Skilled in financial modeling, business development, and energy management, with a strong focus on sustainability and innovation. Adept at leading cross-functional teams, enhancing service delivery, and fostering strong vendor and stakeholder relationships. Committed to continuous improvement and poised for leadership roles that leverage telecom operations and facility management expertise.

Abstract:

The ACES unified platform represents a significant advancement in the management of passive telecom infrastructure. This presentation will explore the challenges and solutions involved in creating a platform capable of integrating 28 different systems from 9 vendors, resulting in a unified monitoring and automated fault management system. Historically, Mobile Network Operators (MNOs) managed both active and passive operations using disparate NMS systems provided by individual telecom vendors, leading to inconsistent data interpretation and management practices.

The ACES platform addresses these challenges by consolidating alarms into a centralized system for comprehensive analysis, categorization, and management, ensuring consistent oversight and improved efficiency. The presentation will also highlight how implementing this platform has shifted operations from a reactive to a proactive and predictive approach, thanks to the development of advanced analytics modules. Additionally, the cultural transformation within ACES played a pivotal role, emphasizing team training, collaboration, and the adoption of new processes to leverage the platform's full potential.

Day 03: Tuesday 28 January 2025

ESG Metrics and Risk Factors in Asset and Facility Management Adapting to Mandatory Reporting Policies

Eng. Mohammad Abu Afifeh
CEO
Conceliare
Jordan

Biography:

Civil Engineer Engineer Mohammad Abu Afifa has extensive experience in engineering development, training and capacity building. He is a board member of the Arab Council for Asset, Facilities and Maintenance Management, and the former Secretary General of the Jordanian Engineers Association (JEA). He also served as the General Manager of the Engineers Training Center at JEA. He previously worked in the Ministry of Education and the Jordanian Ministry of Public Works on international projects. He has played a leading role in supporting engineers across the Middle East and Africa and developing their skills and capabilities according to international best practice standards in many disciplines including consulting, engineering education, professional certifications for engineers and professional qualification for engineers. He has also contributed to professional issues related to the engineering profession such as: Public-Private Partnerships (PPP), governance and strategic plans, total quality management, environmental health and safety, supply chain management, asset and facility management, and engineering education reform. For more than (20) years, he represented Jordan in the International Federation of Consulting Engineers (FIDIC). During this period, he supervised the translation of FIDIC standard contracts into Arabic. He was also a project manager for several international engineering publications, including the Engineering Supervision Guide, the Reinforcement Steel Guide for Buildings, the Building Damage Assessment Guide, and Safety Procedures for Post-Disaster Buildings.

Abstract:

The growing emphasis on Environmental, Social, and Governance (ESG) considerations is profoundly reshaping how global companies manage their assets and facilities, especially in light of impending mandatory reporting requirements. This study critically examines key ESG metrics and risk factors relevant to asset and facility management across various industries worldwide. Through a comprehensive analysis of existing literature and reports, it identifies prevalent ESG challenges and evaluates their impact on operational efficiency and corporate responsibility. The findings underscore the increasing necessity for standardized ESG frameworks that incorporate risk management strategies to meet evolving reporting obligations and stakeholder expectations. The study presents actionable recommendations to enhance the integration of ESG principles in asset and facility management, fostering sustainable operations, improving transparency, and ensuring compliance with emerging global standards. Additionally, the study analyzes secondary data from Saudi-listed companies, providing insights into how corporate governance mechanisms such as board independence and audit committee composition influence ESG disclosures. These findings contribute to the ongoing discourse on sustainable corporate governance, highlighting ESG's role in mitigating risks and bolstering long-term organizational resilience.

Day 03: Tuesday 28 January 2025

The Challenge of Digitalization of the Water Sector

Dr. Mohsen Alamir Alkady
Chairman
Misr Foundation for Science and Technology Research
Egypt

Biography:

Dr. El Kady serves as the Chairman of the Board of Trustees for the Misr Foundation for Science and Technology Research, where he fosters innovation and scientific advancement. He actively participates in the engineering community as a member of several esteemed professional bodies, including:

- The Engineering Education Committee of the General Syndicate of Engineers.
- The Committee for Granting the Degree of Consultant in Sanitary Engineering.
- The Egyptian Society of Engineers, where he is recognized as an active member.

His contributions to the field have been acknowledged through nominations for prestigious scientific awards, including the King Abdullah bin Al Hussein Award for Creativity in its tenth session and the Egypt Impact Award for Sustainable Initiative of the Year at The Big 5 in 2021.

In addition to his academic and professional achievements, Dr. El Kady shares his expertise with the public through radio and television appearances, such as the "Life Messages" program on Egyptian Radio, which focuses on rationalizing water usage, and the "New Day" TV program, which discusses the innovative educational system in STEM schools.

Abstract:

Today, the drive in industries is to focus on reducing production and maintenance cost while increasing customer satisfaction. One key to succeed with these goals is to develop and improve both quality and maintenance in every phases of any industry processes.

As water industry is the most industry need to be safe and sustainable.
So, there is a need to revolutionize the water industry with the current paradigm shift in thechnology to better monitoring and control capabilities.

Hence, there is a need for it situ, smart system for on-line monitoring the complex water treatment processes. The digitalization of water sector is of utmost importance for improving the efficiency and sustainability of managed system. The digitalization process, however, can be seen as a ladder with several steps that the water utility must climb to become a smart utility, the reality is that may water utilities have not completely realized yet the benefits of digital transformation.

The fourth revolution industry (industry 4) has been implemented in multiple engineering field. Such as provisioning of smart monitoring and control capabilities to water supply system (Water 4)
So, water (4) provides an opportunity to identify a promising approach to addressing future managent in water supply network. It incorporates the primary features of (industry 4).

Such as digitization and automated sensors (for pressure, flow, and temperature measurement) and model application such as (hydrolic model of water network) opportunity may be created to better understanding water management problems in terms of their complexity and illustrate the use of water 4 in production, early warning and for the decision making process that tends to sustainability in providing clean water.

Day 03: Tuesday 28 January 2025

Chairman:

Prof. Mufid Samoraei
Board Member
Arab Asset, Facility and
Maintenance Management
Council (OMAINTEC)
Senior Advisor, Sahara Group,
United Arab Emirates

Tamer Hellah
Director
Happy Life Limited
United Kingdom

Eng. Ahmed Rezik
Baseband Software
Engineer
Rohde & Schwarz
TUM
Germany

Samira Ben Ali
President
Maramm
Morocco

Eng. Sulaiman Al Ismaili
MSc Engineering
Management
Oman

Day 03: Tuesday 28 January 2025

Chairman:

Prof. Mufid Samoraei
Board Member
Arab Asset, Facility and Maintenance Management Council (OMAINTEC)
Senior Advisor, Sahara Group
United Arab Emirates

Biography:

Prof. Mufid Samarai is a senior consultant at Sahara Consultancy and the Jahzin Program, sponsored by Sharjah Holding, and an advisory board member of the Civil Engineering Department at the University of Sharjah. He has served as a professor, dean, and research director at universities in Iraq, Jordan, and the UAE. He also worked as a consultant at the National Center for Construction Labs and Deputy Minister of Housing in Iraq. Prof. Samarai earned his Ph.D. from University College London and has led the rehabilitation of over 100 facilities in Iraq, Jordan, and the UAE. With over 230 publications, two books, and four patents, his research focuses on quality control, non-destructive testing, concrete durability, and sustainability.

Day 03: Tuesday 28 January 2025

Zero Trust Architecture Application in Maintenance Operations: A Cybersecurity Perspective

Tamer Hellah
Director
Happy Life Limited
United Kingdom

Biography:

As the visionary Director of Happy Life Limited, a prominent British company, I lead strategic market research, deliver impactful reports, and ensure operational excellence through innovative software solutions. As the founder of Cyber SecVeillance UK, I spearhead cybersecurity initiatives, offering cutting-edge penetration testing, bespoke training sessions, and expert consultation to safeguard client assets. My role as a cybersecurity consultant for DV Solicitors showcases my expertise in identifying vulnerabilities and fortifying web applications and infrastructure.

With years of experience in law enforcement, I have conducted regular security assessments and testing to protect infrastructure against threats. I excel in addressing critical security issues, developing effective strategies, and educating staff on best practices. My volunteer work at the Rosemere Cancer Centre highlighted my exceptional communication skills and empathetic approach.

Passionate about cybersecurity and committed to excellence, I bring unparalleled expertise and leadership to every project, ensuring top-tier security and operational efficiency for my clients.

Abstract:

The benefits of digitisation are improved operational efficiency but significant dangers in terms of cyber security. Especially with IoT, prognostic maintenance and digital twins. This paper discusses the Zero Trust Architecture (ZTA) that can be used in mitigating this risk during maintenance activities. The core principles of ZTA include identity verification, continuous monitoring and data encryption which are a strong basis for protecting digital systems. Real case studies illustrate ZTA enhances security and operational reliability while minimising problems like data breaches among others and conserving resources. Additionally, new technologies such as AI and blockchain will play a role in the future cybersecurity strategies discussed. ZTA is also meant to address issues posed by older security models including unauthorized access, ransomware attacks, malware infections as well as IoT vulnerabilities. As such it would ensure safe, dependable and sustainable maintenance operations thus highlighting the increasing importance of safeguarding sensitive information in an ever more digitalised age.

Day 03: Tuesday 28 January 2025

Building a Smart OS for Facilities Management: How can Facility Managers Leverage Data Engineering, 5G Network, Machine Learning Algorithms and LLMs to Create a Futuristic Management Operating System for Facilities

Eng. Ahmed Rezik
Baseband Software Engineer
Rohde & Schwarz
TUM
Germany

Biography:

Network Baseband Software Engineer at Rhode & Schwarz Munich working on next generation of communication Networks (6G) and Masters Researcher at The Technical University in Munich. I also worked on AI systems on National Scale with Egyptian Ministries and helped scale many startups in the MENA region including (Foodics, Instabug, Thndr). An ex founder of a robo advisor AI app called Wafrah that was incubated by the American University in Cairo Venture Lab and acquired by Thndr now under the name Rumble.

Abstract:

Facility Management (FM) has transformed with the advent of new technologies, yet current systems still struggle to fully optimize operations such as predictive maintenance, space utilization, and resource management. This paper presents a framework for a Smart Facility Management Operating System (FMOS) that harnesses advanced technologies, including Data Engineering, 5G Networks, Machine Learning (ML), and Large Language Models (LLMs), to enhance operational efficiency, decision-making, and sustainability. FMOS integrates real-time data processing, predictive analytics, and natural language interfaces, simplifying interaction and reducing operational complexity. The proposed system improves energy efficiency, automates maintenance, and optimizes resources, offering substantial operational cost savings. Our analysis shows that implementing FMOS in a medium-sized facility could generate estimated annual savings of $380,000, making it a compelling investment for the future of FM.

Day 03: Tuesday 28 January 2025

Revolutionizing Industrial Performance: The Disruptive Power of Sustainable Operability in the Age of AI and Net-Zero Carbon Emission

Samira Ben Ali
President
Maramm
Morocco

Biography:

Visionary leader in sustainable industrial transformation and green technologies with 18 years of international operational experience. As President of MARAMM and Co-founder of GREENTECH-TOUCH, she provides strategic consulting and expertise globally. Their areas of expertise include Industry X.0 & AI, sustainable industrial transformation, green hydrogen, water management, and energy efficiency. A thought leader in industrial sustainability, they excel at bridging emerging technologies with practical applications. Her career highlights include leading major strategic studies, organizing high-impact conferences, and managing complex international projects. As an internationally recognized speaker, she regularly contribute to global forums, shaping the future of industry with a focus on sustainable growth and environmental stewardship. Her forward-thinking approach continues to push boundaries in green technology and industrial innovation.

Abstract:

This presentation explores how Sustainable Operability revolutionizes industrial performance in the era of artificial intelligence (AI) and carbon neutrality goals. We will define this crucial concept and demonstrate how integrating sustainable practices in asset management allows companies to reduce their carbon footprint while improving operational efficiency.

We will first examine the importance of Sustainable Operability, highlighting its economic, environmental, and social benefits. Then, we will address the critical role of AI and emerging technologies in the industry of the future, focusing on predictive and proactive maintenance. We will see how advanced algorithms and data analysis enable anticipating failures, optimizing operations, and extending equipment lifespan while minimizing energy costs.

We will present a Sustainable Operability roadmap inspired by international best practices. This structured approach includes initial assessment, adoption of digital technologies, process optimization, implementation of sustainable practices, employee training, and inter-company collaboration. Case studies will illustrate the impact of these practices across various industrial sectors, with a comparative table of effective actions, specific KPIs, and expected improvement percentages.

We will also discuss recommendations for measuring sustainability, including the development of key performance indicators (KPIs) and the implementation of adapted monitoring systems. Emphasis will be placed on stakeholder engagement and proactive management of sustainability-related risks.
Finally, we will address the challenges associated with adopting these innovations, particularly in terms of training and investment.

This presentation will offer participants a clear vision of how Sustainable Operability can transform their approach to maintenance and asset management in a world focused on sustainability and operational efficiency.

Day 03: Tuesday 28 January 2025

The Impact of Digital Twin

Eng. Sulaiman Al Ismaili
MSc Engineering Management
Oman

Biography:

A results-driven Facilities Management Professional with 15+ years of experience in Operations and Maintenance. Possessing a Master's degree in Engineering Management, I am adept at applying key concepts, analytical tools, and theories to strategic planning in the Engineering sector. My experience and skills allow me to lead teams in a consultative manner while ensuring ethical and sustainable practices. I am adaptable to technological trends and have successfully managed the impact of emerging and disruptive technologies. I am currently seeking new opportunities and challenges for professional growth in higher roles.

Abstract:

Digital Twin technology serves as a digital replica of physical assets, systems, or processes, enabling real-time insights through advanced integration with IoT, AI, and big data analytics. This paper, titled "The Impact of Digital Twin," explores how digital twins are transforming industries by enhancing operational efficiency, predictive maintenance, and sustainability. With applications across sectors like manufacturing, urban planning, and healthcare, digital twins provide a powerful tool for optimizing resources, reducing downtime, and fostering innovation. Despite challenges such as data management, cybersecurity, and high initial costs, the rapid adoption of digital twins is reshaping technological landscapes, supporting more sustainable and resilient infrastructure. The study examines current implementations and the future potential of digital twins, emphasizing their significance in aligning with Industry 4.0 goals and advancing the integration of digital and physical worlds for more strategic decision-making and optimized performance.

Day 03: Tuesday 28 January 2025

2 PARALLEL SESSIONS

Session 10:
Advancements in DigitalSolutions for Predictive Maintenance

Hall A
11:35 – 12:45

Chairman:
Dr. Tomáš Hladík
Principal Consultant
Logio s.r.o.
Czech

Eng. Waleed Nazhat
Chief Engineer
Baba Gurgur Association
of Turkmen Engineers
Iraq

Dr. Nader Gharib
Head of Architectural
Engineering and
Environmental Design
College of Engineering and
Technology
AASTMT
Egypt

Eng. Mohammed Al-Haj
Facility Engineer
Sulaiman Alrajhi University
Saudi Arabia

Eng. Suleiman Barada
Managing Partner
XEEVOLVE
Lebanon

Day 03: Tuesday 28 January 2025

Chairman:

Dr. Tomáš Hladík
Principal Consultant
Logio s.r.o.
Czech

Biography:

Working as consultant in the team of Logio, a Prague-based consultancy, Tomas Hladik has managed projects mainly in power-generation, petrochemical, automotive, FMCG and pharma industries for clients like: SKF, PKN Orlen, Volkswagen, Škoda Auto, BMW, Valeo, Laufen/Roca, ASAHI, Škoda Transportation, Teva, Sotio, Oncomed, Viapharma and a number of others.

Tom's specializations include maintenance and spare parts management, asset management, dynamic simulation of material flows, lean manufacturing, automated logistic technologies and production planning and scheduling.

Tom has been within EFNMS since 2005 active mainly in Education and Training and serving as Chairman of the European Training Committee in the past.

Day 03: Tuesday 28 January 2025

Data Analytics of Machines through Predictive Maintenance Strategies and Their Applications using Programmable Control Systems and the Internet of Things

Eng. Waleed Nazhat
Chief Engineer
Baba Gurgur Association
of Turkmen Engineers
Iraq

Biography:

Waleed Nazhat Nashat, Member of the Baba Gurgur Association of Turkmen Engineers and membership in Arab Asset, Facility and Maintenance Management Council
And Member of the Iraqi Engineers Union, and chief engineer at the Oil Company

He holds a Bachelor's degree in Fuel and Energy Technology Engineering from Kirkuk College of Technology (2003-2004). He has many research papers published inside and outside Iraq, the most important of which are (Oil prices in the international market and their implications for the politics of countries / International Conference for Iraqi Oil Studies / Baghdad), (Apply Markov chains to control degradation

Facilities and equipment management at the Conference of the Eleventh International Forum for Operation and Maintenance in Arab Countries / Cairo), (Maintenance is the basic building block and quality guide for companies and institutions / Conference of the Eleventh International Forum for Operation and Maintenance in Arab Countries / Lebanon), (Management of operations and maintenance in companies and institutions during... Wars and regional instability within the framework of a comprehensive (comprehensive) emergency plan/UAE)

Abstract:

Predictive maintenance has revolutionized traditional maintenance strategies by introducing advanced technologies such as vibration sensors and thermal cameras. These innovations have significantly enhanced the quality and performance of machinery in industrial facilities while increasing production efficiency and reducing maintenance costs. This transformation has been further accelerated by the Fourth Industrial Revolution and the emergence of the Internet of Things (IoT), which have developed new concepts and technologies within this maintenance approach.

This research presents a comprehensive overview of predictive maintenance, elaborating on modern techniques and methods for its implementation. It examines the associated costs and explores strategies to minimize equipment breakdowns to achieve the objectives of predictive maintenance.

Additionally, the study highlights the current state of maintenance in facilities and factories, which are crucial economic entities impacting citizens' lives. This assessment includes an analysis of a specific factory, its departments, types of machinery, field visits, and personal interviews to better understand existing maintenance practices.

The research aims to design a pilot plan that transitions the factory's current maintenance practices to a predictive maintenance model through the following proposals:
- **First Proposal:** Utilize Programmable Logic Controllers (PLC) to monitor vibration data via sensors installed on machinery, enabling early warning notifications through visual alerts and electronic messages to maintenance supervisors.
- **Second Proposal:** Integrate the PLC system with a Supervisory Control and Data Acquisition (SCADA) system, displaying vibration sensor values on touch screens to alert machine operators when maintenance is necessary.
- **Third Proposal:** Implement cloud applications to transmit vibration data over the Internet for analysis, allowing the system to send notifications to users regarding maintenance needs.

Day 03: Tuesday 28 January 2025

Architectural Digital Twins: Enhancing Building Lifecycle Management through Predictive Maintenance and Restoration

Dr. Nader Gharib
Head of Architectural Engineering and Environmental Design
College of Engineering and Technology
AASTMT
Egypt

Biography:

Nader Mohamed Gharib Mohamed holds a PhD in Sustainable Environmental Architecture (2010) from the Faculty of Engineering, Alexandria University. His dissertation was titled "Sustainable Environmental Architecture: Applying Life Cycle Assessment to Siwan Housing." He has been the Head of the Department of Architecture and Environmental Design at the College of Engineering and Technology, Arab Academy for Science, Technology, and Maritime Transport, Port Said branch, since September 2015.

He was honored to serve as an Assistant Professor of Architecture at Umm Al-Qura University in Saudi Arabia for seven years. From December 2003 to March 2005, he also had the privilege of working as the Executive Director of the Forum for the Preservation of Archaeological and Architectural Heritage in Alexandria, Rosetta, and Siwa, a project funded by the U.S. Government's NGO Service Center and affiliated with the Friends of the Environment Society. He was a member of the Architectural Heritage Documentation Committee in Alexandria, under the National Organization for Urban Harmony in 2007.

Dr. Nader has participated in numerous local and international conferences, presenting research related to Egyptian urbanism, and has contributed to several publications, including a booklet titled "Archaeological Heritage as a Pathway to Sustainable Development in the City of Rosetta" in 2004. He has also won first place in several international architectural design competitions.

Abstract:

This study explores architectural digital twinning as an advanced tool for managing and maintaining heritage buildings. It begins by introducing the concept of digital twinning and its applications in architecture, focusing on its significance for historically valuable structures. The research reviews various types of maintenance, identifying the most suitable approach for implementation within the digital twin context. It also discusses appropriate restoration methods for this technology, analyzing decision models related to preservation and maintenance processes. The study presents a methodology for assessing heritage building needs and prioritizing interventions using digital twins. Finally, the research evaluates this methodology, highlighting its advantages and limitations, and providing insights into the potential of digital twinning in efficiently preserving and managing architectural heritage.

Day 03: Tuesday 28 January 2025

Digital Twin Emerging Technology: Empowering Predictive Maintenance for Enhanced Equipment Reliability and Operational Efficiency

Eng. Mohammed Al-Haj
Facility Engineer
Sulaiman Alrajhi University
Saudi Arabia

Biography:

Electrical Engineer in Facilities Management at Sulaiman Al-Rajhi University, with an interest in energy systems and the integration of renewable energy sources. Focused on developing smart and sustainable solutions to enhance facility efficiency and extend operational lifespans, with a particular emphasis on advanced maintenance technologies. Actively involved in research projects that explore the impact of renewable energy on infrastructure resilience and operational cost reduction. Mohammed is committed to contributing to the community through volunteer activities, participating in initiatives aimed at raising awareness about clean energy, and promoting sustainable energy use. He has participated in several scientific conferences and seminars in the energy field, enhancing his knowledge and facilitating the exchange of expertise with other professionals. He strives to develop the field and sector continuously.

Abstract:

Predictive maintenance has gained significant attention as a crucial system capability in accurately identifying impending machine failures and scheduling timely repairs. With the advent of technologies like the Internet of Things, Big Data, and Artificial Intelligence, a new data-driven paradigm known as the digital twin has emerged, capturing the interest of researchers and industry stakeholders. This paper thoroughly explores the role of digital twin technology in predictive maintenance, specifically focusing on its potential to overcome the limitations associated with accuracy, reliability, and adaptability. It provides an in-depth examination of the technical features and real-world applications of digital twin technology in fault diagnosis, prediction, and maintenance decision-making. The primary objective of this study is to provide valuable insights and practical recommendations to organizations seeking to elevate their maintenance practices through the adoption of digital twin-based predictive maintenance strategies. By conducting a comprehensive review of two scientific papers that develop digital twin models for monitoring and maintaining electrical machines, this paper emphasizes the practical implementation and tangible benefits of digital twin technology in the field of predictive maintenance. It highlights the potential for cost reduction, increased productivity, and improved maintenance schedules across diverse industries. In conclusion, this paper contributes to the advancement of digital twin technology in predictive maintenance by underscoring the significance of digital twins in enhancing equipment reliability and operational efficiency. It emphasizes the need for continuous research and development efforts to fully harness the transformative potential of digital twin-based predictive maintenance systems.

Day 03: Tuesday 28 January 2025

Digital Infrastructure Mapping
Eng. Suleiman Barada
Managing Partner
XEEVOLVE
Lebanon

Biography:

Eng. Suleiman Barada is a distinguished leader in the fields of management consulting and digital business transformation, with nearly 25 years of experience. Suleiman is the Senator for Lebanon at the World Business Angel Investment Forum, Regional Ambassador for Lebanon at the Global Blockchain Business Council, and President of the Lebanon Chapter at the Global Innovation Institute. Suleiman has led and scaled multidisciplinary consulting practices in the MENA region and has worked with sectors such as construction and engineering, international development, defense, government, financial services, healthcare, higher education, and more. Holding multiple certifications, including Certified Business Architect, Certified Innovation Strategist, Authorized Innovation Assessor, and Project Management Professional, Suleiman is a passionate advocate for innovation, value creation, and purpose-driven solutions.

Day 03: Tuesday 28 January 2025

Chairman:

Dr. Hamza Ghulman
Academic Consultant
University of Business
and Technology UBT
Saudi Arabia

Eng. Ehab Bassam
Business Development
Manager
Lasoman Machines
Empowering
Saudi Arabia

Eng. Esraa Rashad
Researcher
Mansoura University
Egypt

Eng. Hamza Ibrahim
Lead Technical Sales
Neura Robotics
Germany

Dr. Tarek Nasab
Associate Professor
Lebanese International
University
Lebanon

Day 03: Tuesday 28 January 2025

Chairman:

Dr. Hamza Ghulman
Academic Consultant
University of Business and Technology UBT
Saudi Arabia

Biography:

Dr. Hamza A. Ghulman is an Associate Professor in Mechanical Engineering Department, College of Engineering, University of Business and Technology UBT. He has total experience of more than 35 years of Teaching at Umm Al-Qura University and 03 years of Industrial experience. He held positions from 2001 to 2018, where he held the position of Head of the Mechanical Engineering Department, Vice Dean for Academic Affairs, Dean of the Custodian of the Two Holy Mosques institute of Hajj and Umrah Studies, and Dean for the college of Engineering and Islamic Architecture for many periods.

• Bachelor's and Master's degree in industrial engineering-King Abdul Aziz University, KSA.
• Master's degree in Mechanical Engineering-Ohio University, USA
• PhD (Mechanical Engineering) Ohio University, USA.

He has a wealth of experience in manufacturing and industrial courses.

A member of the national and international associations such as the Saudi Council of Engineers (consultant), ASME, Arab Institute for Operation and maintenance and many other societies.

He published more than 85 research papers and books that have been published in scientific journals, conferences, seminars and workshops in which he participated locally and internationally.

Chair of the Mechanical Technical Committee of the Advisory Committee of the National Committee for the Saudi Building Code.

Head of the technical team to supervise the designs of the project to increase the capacity of the terminal in the Holy Mosque in Makkah.

Day 03: Tuesday 28 January 2025

Saudi Arabia's Industrial Future with 3D Printing and Digital Solutions

Eng. Ehab Bassam
Business Development Manager
Lasoman Machines Empowering
Saudi Arabia

Biography:

A Mechatronics Engineer with over five years of experience in additive manufacturing, reverse engineering and business development. I started my journey in technical sales, and over time, I've found my passion in driving growth and innovation by blending engineering expertise with business strategies. As a Business Development Manager, I've been fortunate to work with amazing teams and clients, helping to introduce cutting-edge solutions and foster strong client relationships. Outside of work, I'm passionate about creating science content on social media, where I love to share interesting facts and discoveries

Abstract:

Discover how 3D printing and digital technologies are shaping the future of Saudi Arabia's industrial landscape. This workshop offers an in-depth introduction to advanced 3D printing and scanning technologies, such as FDM, SLA, SLS. Explore the advantages of additive manufacturing, including complex geometries, waste reduction, and reverse engineering, with practical applications across sectors like medical, dental, education, industrial, and jewelry.

Through global and Saudi-specific case studies, learn how businesses and government initiatives are driving innovation and economic growth with 3D technologies. Gain insights into the digital transformation of logistics and warehousing, from local production and supply chain optimization to smarter logistics solutions.

Aligned with Saudi Vision 2030, the workshop highlights how 3D printing supports economic diversification, sustainability, and innovation while addressing challenges such as costs and material limitations. Participants will also explore future trends like multi-material printing, bioprinting, and Saudi Arabia's contributions to the global 3D printing revolution.

Day 03: Tuesday 28 January 2025

Advancing Prosthetics: Personalization with 3D Printing, AI, and the Critical Role of Maintenance

Eng. Esraa Rashad
Researcher
Mansoura University
Egypt

Biography:

Esraa Ahmed Rashad is a biomedical engineer, researcher, and professional CAD designer pursuing her M.S. in Biomedical Engineering, her thesis focuses on optimizing running blade prosthetics using advanced materials. Esraa has completed internships at Mansoura University Oncology Hospital, an ophthalmic hospital, and the Military hospital in Mansoura, gaining valuable experience in clinical engineering. She has also supervised student projects in hospital planning.

Esraa is committed to community service. She volunteers as a language instructor, a wall artist for a local school, and a member of Resala Charity. She looks forward to sharing her research at the OMAINTECH conference and contributing to advancements in biomedical engineering.

Abstract:

This paper explores the technological advancements in prosthetic design through 3D printing and AI integration. Special emphasis is placed on personalized prosthetics for athletes, specifically the development of running blades. The importance of prosthetic maintenance is also discussed, with a focus on predictive maintenance solutions that utilize AI and smart sensors. By addressing the challenges in the current system of prosthetics in Saudi Arabia (KSA) and Egypt, this paper suggests improvements to increase accessibility, affordability, and longevity of prosthetic devices.

Day 03: Tuesday 28 January 2025

Robotics and AI: Shaping the Future of Large-Scale Maintenance and Construction Operations
(Painting as a Case Study)

Eng. Hamza Ibrahim
Lead Technical Sales
Neura Robotics
Germany

Biography:

Eng. Hamza Ibrahim is a mechanical engineer specializing in collaborative and cognitive robotics. With a strong foundation in software development and embedded systems, he integrates mechanical design expertise with advanced software skills to drive innovation in robotics. His extensive experience working with software startups has equipped him with a versatile skill set that bridges the gap between hardware and software solutions.

For the past three years, he has been based in Germany, contributing to the field of robotics development. His work focuses on creating intelligent robotic systems that enhance human-robot collaboration, pushing the boundaries of how machines interact with people. Through his multidisciplinary approach, he is at the forefront of advancing technologies that shape the future of robotics.

Abstract:

The construction industry faces significant challenges in labor-intensive tasks like painting, including labor shortages, inconsistent quality, safety risks, and environmental concerns stemming from traditional manual methods. This paper explores the application of robotics and artificial intelligence (AI) to automate painting operations on construction sites, aiming to enhance efficiency, safety, quality, and sustainability. We introduce a prototype robotic painting system that integrates advanced robotic arms equipped with AI algorithms for optimized painting paths, precise application, and real-time data collection for continuous process improvement. By automating the painting process, the proposed system is expected to achieve a 40% reduction in labor costs and a 2.5-fold increase in operational speed compared to conventional methods, while significantly reducing material waste and enhancing safety by minimizing human exposure to hazardous environments.

A case study of the Canvas robotic drywall finishing system is presented to illustrate the practical benefits of robotics and AI in construction painting. The case study demonstrates substantial improvements in productivity, consistent high-quality finishes, and enhanced worker safety. The findings underscore the feasibility and positive impact of integrating robotics and AI into construction painting tasks, aligning with industry trends toward automation and digitalization. This integration contributes to the broader goals of sustainable operational excellence and environmental stewardship in the construction sector, offering a viable solution to longstanding inefficiencies and setting the stage for future advancements in construction technology.

Day 03: Tuesday 28 January 2025

Optimal Automated Designing Process for Annual Planning and Workload Distribution of Work Orders

Dr. Tarek Nasab
Associate Professor
Lebanese International University
Lebanon

Biography:

Dr. Tarek Nasab is an Associate professor at Lebanese International University in Electrical Engineering Dept. since Sept. 2016.

He was the Chairman of the Technical and Construction Departments at Saudi Oger Training Institute; May 2011 – Sept. 2016. He pursued an education in Electrical Engineering / Control System that culminated with a Ph.D. from the University of Tennessee, USA in 1995. In 1986 and 1988 He earned his B.S. and M.S. degrees from the Tennessee Technological University. He has 23 publications in his field of expertise. From 1994 till 1998, he joined the College of Technology as an Assistant Professor at Dammam, Saudi Arabia. Since 1998, he joined the Saudi Oger Ltd. Company. He has 21 years of teaching experience and 20 years of Maintenance Management experience." He worked as a maintenance management consultant for 2 years for the director of the South Lebanese Water Establishment (SLWE) Foundation.

Abstract:

Effective planning of preventive maintenance work orders is crucial for the optimal performance and longevity of equipment and systems in various industries. This study investigates a strategic approach to scheduling preventive maintenance tasks by aligning them with common maintenance frequencies, synchronized execution hours, and consistent manpower allocation. The objective is to streamline maintenance operations, minimize downtime, and enhance overall efficiency. By analyzing historical maintenance data and identifying patterns in maintenance needs, the research proposes a model that groups work orders based on their frequency of occurrence, ensuring that tasks requiring similar intervals of attention are scheduled concurrently. Additionally, the model standardizes the execution hours for maintenance activities, allowing for better coordination and reduced disruption to operational workflows. The allocation of manpower is optimized to maintain a uniform number of personnel assigned to maintenance tasks, balancing the workload and preventing bottlenecks. The findings indicate that such an integrated planning approach can significantly improve the predictability and effectiveness of maintenance operations, leading to cost savings and improved asset reliability. This study provides a framework for maintenance managers to enhance their preventive maintenance strategies, ensuring that resources are utilized efficiently and maintenance activities are performed with minimal impact on productivity.

Day 03: Tuesday 28 January 2025

Panel Discussion:
Regional Experiences in Asset, Facility and Maintenance Management Enhancing Maturity Levels in Asset and Facility Management

🕐 **13:15 – 14:15**   🗺 **Hall A**

Moderator:
Eng. Khaleid Aluneizi
CEO, MEST
Facilities and
Maintenance
Management Expert
Saudi Arabia

Eng. Mohsen Aljamaan
Professional Civil
Engineer
Ministry of Education
Saudi Arabia

Eng. Mariam Al Ali
Head of The Federal
Buildings Management
and Control Section
Federal Buildings Assets
Department
Ministry of Energy &
Infrastructure
United Arab Emirates

Eng. Majed Al-Towiher
Director General of
Engineering Affairs ,Tabuk
University, Saudi Arabia

Day 03: Tuesday 28 January 2025

Moderator:

Eng. Khaleid Aluneizi
CEO
MEST
Facilities and Maintenance Management Expert
Saudi Arabia

Biography:

Strategic Localization Consultant. Specialized in building reference systems and governance models for the facilities management sector.

• The Experience of the Ministry of Education in Asset and Facility Management

Eng. Mohsen Aljamaan
Professional Civil Engineer
Ministry of Education
Saudi Arabia

Biography:

Bachelor of Science in Civil Engineering, specializing in construction, and has more than 15 years of experience in the field of educational buildings, working in the fields of studies, designs, supervision and implementation of projects, maintenance and operation, and currently in facilities management.

• Smart Sustainable Buildings and Their Role in Reducing Carbon Emissions

Eng. Mariam Al Ali
Head of The Federal Buildings Management and Control Section
Federal Buildings Assets Department
Ministry of Energy & Infrastructure
United Arab Emirates

Biography:

Eng. Mariam Alali holds a Bachelor's degree in Architecture and a Master's degree in Strategic Management and Leadership, graduating with first-class honors. Additionally, she has earned diplomas in Government Innovation, Future Leaders, and Asset Management. Maryam has been recognized with numerous awards, honors, and intellectual property rights. She currently manages several pioneering projects in the United Arab Emirates, with the digital system for managing infrastructure assets being among the most notable.

Day 03: Tuesday 28 January 2025

Tabuk University's Experience in Digital Applications for Asset and Facility Systems According to The EXPRO Methodology
Eng. Majed Al-Towiher
Director General of Engineering Affairs
Tabuk University
Saudi Arabia

Biography:

Director in project management with a proven track record of accomplishments in the higher education industry. competent in project estimation, energy management, operations management, and engineering. Proficient in program and project management, possessing a mechanical engineering bachelor's degree from Umm Al-Qura University while still pursuing the master's degree from a reputed UK university.

The General Director of the General Administration of Engineering Affairs, both currently and over the previous four years. held the role of Director of Projects Management in the corresponding division. four years as a site engineer for a maintenance and operations company.

Day 03: Tuesday 28 January 2025

Abstract:

We are currently living in an age marked by rapid and unprecedented technological advancements, significantly impacting the facilities management sector, which undergoes transformative changes in how we interact with our living and working spaces.

The development journey within the General Administration of Engineering Affairs began with a modern outlook, focusing on restructuring and enhancing local talents while creating innovative work methodologies across various levels. At Tabuk University, we adopted the EXPRO methodology in both spirit and structure. This approach encompasses a comprehensive five-year planning strategy, integrates government project management methodologies, and culminates in asset and facility management, which is the focal point of this paper.

Our experience in asset and facility management is distinctly tailored to the specific demands of this field. We initiated our efforts by redesigning processes to align with our digital transformation goals, fully adhering to the principles endorsed by EXPRO. Subsequently, we identified the technical specifications required for the future digital systems, ensuring they reflect the criteria outlined in tenders for modern digital asset management systems incorporated into our management plan. We established a framework to link our digital project management system—custom-developed for Tabuk University—ensuring integration between projects and facilities in accordance with the EXPRO methodology. This digital integration and connectivity serve as the foundation for enhancing the efficiency of operations and maintenance teams, providing reliable information to support decision-making at all organizational levels.

A critical element of our proposed digital environment is the use of cutting-edge IT tools, such as the Internet of Things and artificial intelligence, which redefine the standards for efficiency, effectiveness, and sustainability. Our objective is to gain a deeper and more precise understanding of facility usage, leading to the development of a proactive system capable of early detection of potential malfunctions before they arise, rather than merely identifying and mitigating existing issues.

We prioritized sustainability, emphasizing energy conservation and sustainable construction practices that genuinely respect the green environment. We selected standards for smart buildings that enhance operational efficiency while ensuring the comfort and health of all users, including educational staff, students, and workers. Our goal is to create an environment that enriches their lives and inspires creativity and innovation. Additionally, we aim to leverage augmented reality technologies in maintenance activities and incorporate mobile applications to facilitate user interactions with facilities.

In conclusion, our experiment has yielded an integrated product based on the EXPRO methodology (National Guide for Asset and Facilities Management). This system not only complies with existing digital systems but also introduces a fresh vision and a distinctive modern approach.

This paper outlines the evolution of our development journey, illustrating the foundational work we've recently accomplished and the planned future initiatives we aspire to launch.

الإدارة العامة للخدمات الصحية بوزارة الدفاع
General Directorate of Health Services, Ministry of Defense

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- Third-Party Inspection Services
- General Inspection Services
- Inspection Services for SASO and SABER Certifications

2.Training and Assessment:
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- NDT Courses
- Rigging Courses
- Lifting Courses

TEST Co. remains committed to supporting Saudi Arabia's Vision 2030 by contributing to the development of the nation's industrial landscape. By maintaining the highest standards of quality and safety, TEST Co. continues to play a vital role in ensuring the operational excellence of its clients' assets and infrastructure.

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www.testcosa.com

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FUJI TECOM INC.

CEPCO is a sole agent for sales & after sales services in Saudi Arabia of world class manufacturers for HV, MV & LV Electrical testing and measuring equipment, in addition to SF6 Gas handling equipment, water leakage detection, Thermal imaging cameras, GPR, and Oil filtration Machines.

We provide after-sales services through our sister company Gulf Experts which is an authorized service center for calibration, maintenance and training.
Rental equipment are available.

Main Sales office
Branch Sales Office
Service Center

Main Sales Office, Riyadh
Branch 1 Service Center, Dammam
Branch 2 Sales Office, Khobar
Branch 1 Sales Office, Jeddah
Main Service Center, Riyadh
Map of Saudi Arabia

Riyadh, Al Nuzha Dist. Prince Muqrin Bin Abdulaziz road opposite side of Musa Al-Ismael Mosque.
P.O. Box 300885, Riyadh 11372, Kingdom of Saudi Arabia
Tel.: + 966 11 460 0803
E-mail: Inquiry@cepco-sa.com
Website: www.cepco-sales.com

CEPCO Sales

"Advancing for a Sustainable Operational Excellence and Digitization in Total Integrated Facilities Management Services - FMCO"

WHERE EFFICIENCY MEETS EXCELLENCE

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BUILDING CONTROLS & AUTOMATION SYSTEMS SERVICES.

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BUILDING CONTROLS & AUTOMATION SYSTEMS SERVICES.

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INTELLIGENT TRANSPORTATION SYSTEMS SERVICES.

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WATER PROOFING SREVICES.

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CLEANING & SANITIZATION SERVICES.

LANDSCAPE SERVICES.

PEST CONTROL SERVICES.

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WASTE MANAGEMENT SERVICES.

SECURITY GUARD

SINCE ITS INCEPTION BY MBL IN 2018,
IFAS HAS BEEN TAKING MASSIVE STRIDES TOWARDS GROWTH. TODAY IFAS MANAGES TOTAL FM FOR CRITICAL FACILITIES ACROSS 25 MILLION SQUARE METERS IN SAUDI ARABIA AS WELL AS MOROCCO, FRANCE, AND THE UK.

FIND IFAS AT BOOTH #C06 – #C07.
THE TEAM IS ALL ABOUT NETWORKING AND ENLIGHTENING CONVERSATIONS WITHIN THE FM INDUSTRY.

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Partial Discharge
Monitoring and Testing Solutions

www.ipecuk.com

About IPEC

IPEC are experts in Online Partial Discharge (PD) testing and monitoring of MV, HV, and EHV plant. Founded in 1995 in Manchester, UK, we have world leading technology for the detection and location of PD in cables, switchgear, GIS and accessories.

Our instruments include first level PD detector and advanced PD locator for switchgears. Our PD monitoring system has been installed in more than 50 countries and is monitoring more than 20,000 assets around the world.

IPEC KSA

IPEC's mission is to bring expertise and market leading products and services to the power industry by listening to customer needs and creating innovative, quality, technical solutions that are sustainable, reliable and long term.

Working in Saudi Arabia for over a decade, IPEC have collaborated with SEC and the engineering community in Saudi Arabia to support effective implementation of Condition Based Maintenance (CBM) products and solutions in the Kingdom.

IPEC have deployed both permanent monitoring systems and portable handheld test devices across all regions of the country. Our team of engineers, based at our Riyadh office, work closely with SEC engineers to detect, locate, and repair defects before they lead to failure.

PD Monitoring

The ASM monitors PD in MV, HV, and EHV equipment, providing real-time condition data online.

PD Instruments

Portable PD instruments detect, quantify, and locate network defects with ease and efficiency.

PD Sensors

IPEC's PD sensors are available in multiple designs to suit different installation need and compatible with IPEC and 3rd party equipment.

Services

Our engineers test assets globally, offering CBM services like PD testing, training, and data analysis.

Follow us on socials for more PD knowledge!
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Cost Control

Latest Tracking Technology

COMPONENTS OF OUR FAM SOLUTIONS

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▲ Physical audit
▲ Barcodding & tagging Physical tracking software module
▲ Integration with financial module [optional]
▲ Financial management software module

For your customized
Fixed Asset Magement Strategy contact our experts:
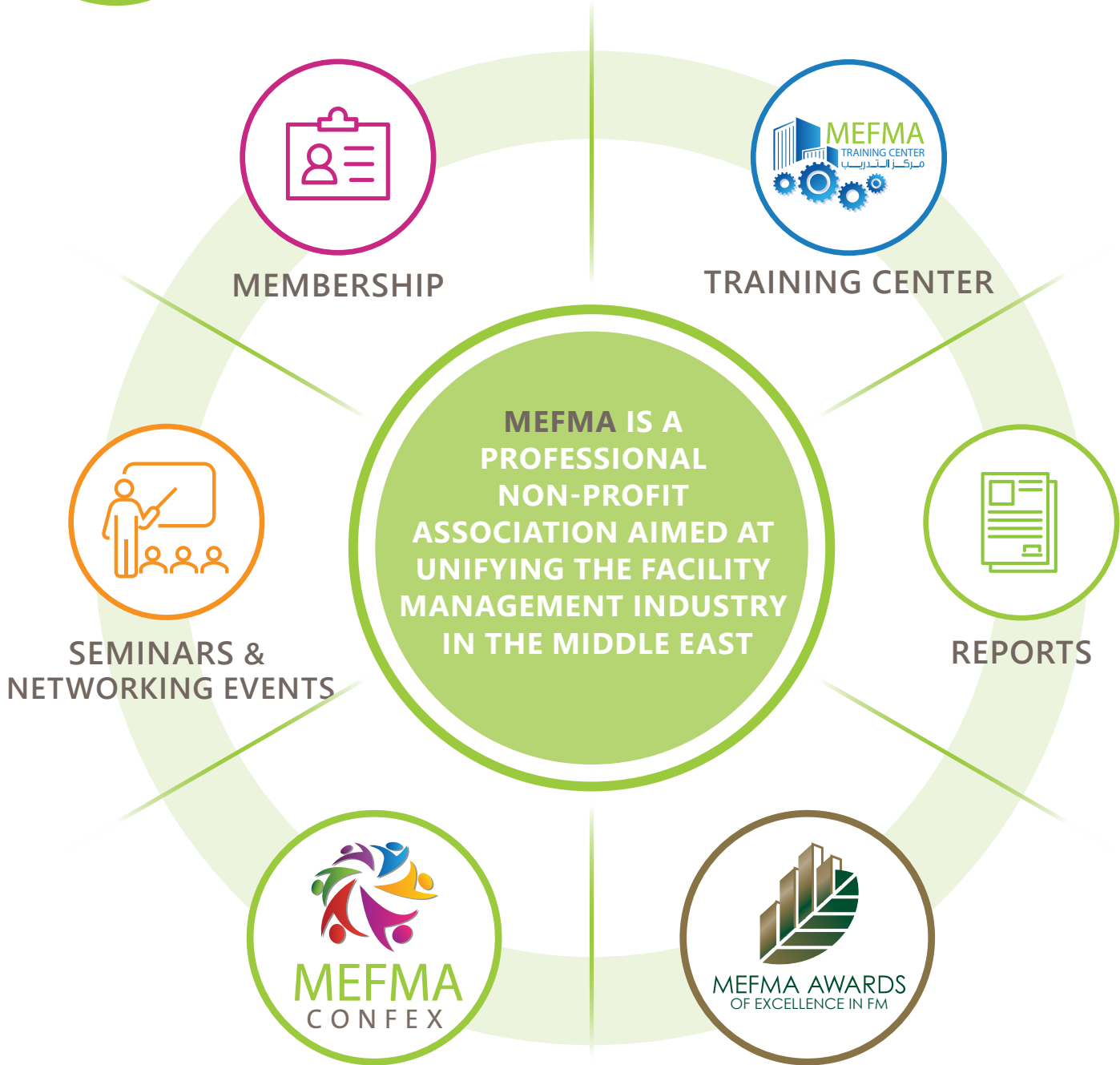**+966 9200 05569 | ironmountain.com/en-sa**

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MEMBERSHIP

TRAINING CENTER

MEFMA IS A PROFESSIONAL NON-PROFIT ASSOCIATION AIMED AT UNIFYING THE FACILITY MANAGEMENT INDUSTRY IN THE MIDDLE EAST

SEMINARS & NETWORKING EVENTS

REPORTS

MEFMA CONFEX

MEFMA AWARDS OF EXCELLENCE IN FM

MEFMA CONFEX & AWARDS 2025

25-27 May 2025

For More details

Riyadh, KSA

الشركـة الوطنية
للإدارة والخدمات
المـحــــدودة

National Company
for Management
and Services LTD

NCMS

NATIONAL COMPANY
for Management and Services
(NCMS)

Integrated Facility Management
Established: 1976

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Certified ISO - 45001: 2018

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APSG
GROUP OF COMPANIES

شركة ناصر عبدالله أبوسرهد للتشغيل والصيانة
Nasser Abdullah Abu Sarhad Operation & Maintenance Co.

خدمات الضيافة
Hospitality Services

خدمات النظافة
Housekeeping Services

التشغيل والصيانة
Operation & Maintenance

الترميمات والتجديدات
Renovation & Restoration

الأنظمة الأمنية
Security Systems

خدمات الزراعة
ومكافحة الحشرات والآفات
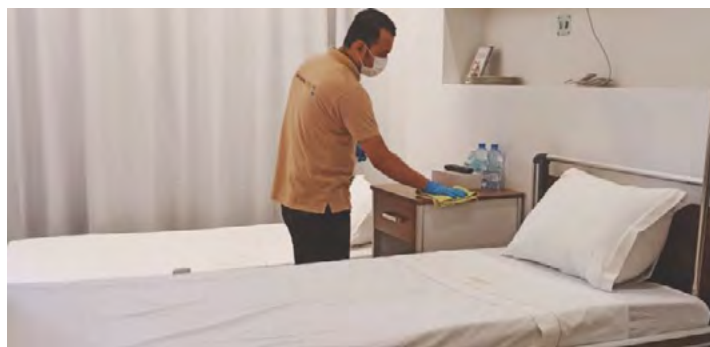**Landscaping & Pest Control**

ACCIONA in the KINGDOM OF SAUDI ARABIA

ACCIONA is a leading global company at the forefront of energy, construction, concessions, water, industrial, and services sectors, focusing on sustainability, social well-being, and carbon neutral since 2016.

ACCIONA offers facility services in the Middle East since 2013.

It provides a comprehensive outsourcing model, developing specific individual services to overall management via **Integrated Facility Management (IFM)** contracts.

SOFT SERVICES

- Housekeeping & Janitorial
- Food Industry Cleaning
- Hospitality
- Portering
- Laundry
- Pest Control
- Landscaping
- Waste Management

SPECIALIZED SERVICES

- Robotic Disinfection
- Marble Polishing & Floor Treatment
- Hood Degreasing
- Rope Access

HARD SERVICES

- Preventive, Conductive & Corrective Maintenance
- Emergency Response
- Civil Works
- Fit-Out
- Condition Surveys
- Quality Assurance

SUPPORT SERVICES

- Administrative Staff
- Security
- Process Improvement
- Property Management
- Procurement
- HR & Recruitment
- Payroll

BUSINESS SOLUTIONS

Focus on what you do best and leave the rest to us. At ACCIONA, we specialize in handling every aspect of your business that falls outside your core activities

BTAM
Advanced Operations & Maintenance
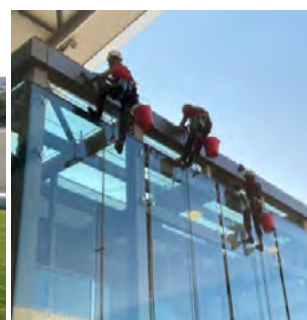
About Us

Since 2007, BT Advanced Operation and Maintenance (BTAM) is the leading integrated solutions service provider for Operations and Maintenance in the Kingdom of Saudi Arabia . In addition to our Operations and Maintenance services for low current & Data Centers, BTAM has extended its portfolio on providing ISP services, Call center solutions & IT project Management, as well as it provides Facilities Management services in partnership (MOU) with Key Facilities Management International (KFMI), the well-established Facilities Management Group in the UK.

Vision

Setting the benchmark of excellence and continuous improvement that is recognized as a national leader in Operation Maintenance of Low Current Systems, Facilities Management services and customer satisfaction.

Mission

To provide Operation Maintenance & Facilities Management services that exceed our customers' expectations and keep a long-term commitment to our customers, establish a highly skilled workforce and maintain being a recognized leader in this industry.

Values

Commitment | Excellence | Reliability | Support | Ethics

INDUSTRIES WE SERVE

Government   Airport   Healthcare   Hospitality   Education   Oil & Gas

FACILITIES MANGMENT SERVICES FOR:

Baggage Reconciliation | Access Control | Uninterruptible Power Supply | Intrusion System

Flight Information Display | Visual Guidance Docking | Road Blockers & Barriers | Structure Cabling System

X-Ray & Security Scanning | Intercom | Fire Alarm System | Building Management System

Nurse Call | IP Telephone | Data Center | CCTV System
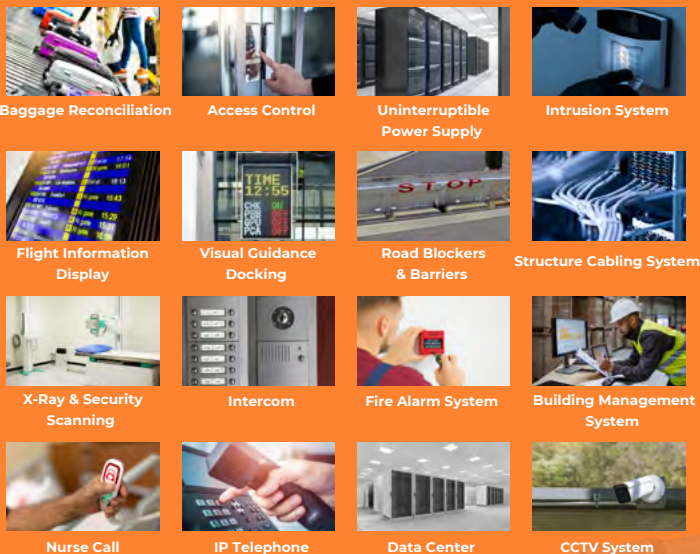
OUR CLIENTS

MORE INFORMATION:

CONTACT US:

+966 920006913

info@btam.fm

www.Btam.fm

BTAM
Advanced Operations & Maintenance

شركة صحارى لخدمات الصيانة المحدودة
SAHARA MAINTENANCE SERVICES CO. LTD.

نحن شركة رائدة في التشغيل والصيانة والنظافة و إدارة المباني والمرافق والمنشأت وخدمات الزراعة و التشجير و خدمات الإعاشة .

مذ بدئنا اولى خطواتنا عام ١٤٠١م فقد ساهمنا وبشكل كبير في دعم المشاريع الحيوية بهذه الخدمات عبر فريق مدرب وذو كفاءة عالية تم انتقاءه خصيصا لتقديم خدمات متميزة تتناسب مع التطور الذي تشهده مملكتنا الحبيبة يوما بعد يوم .

وتشهد بذلك خبراتنا الطويلة حيث عملنا بكل كفاءة واحتراف جنب إلى جنب مع العديد من الجهات الحكومية مثل وزارة الدفاع والقوات الجوية الملكية السعودية و وزارة الخارجية و وزارة المالية وجامعة الملك سعود ومدينة الملك عبد العزيز للعلوم والتقنية وجامعة الامام محمد بن سعود والكثير من امانات المناطق المختلفة , حيث انجزنا خلال الخمس السنوات الماضية اكثر من ١٥٠ مشروع في مجالات عدة ونقوم حالياً بتنفيذ اكثر من ٤٠ مشروع حيوي على امتداد مملكتنا الغالية بعقود مباشرة مع الجهات الحكومية او شركات حكومية و من ابرز الخدمات التي نقدمها لعملائنا الكرام :-

إدارة المباني والمنشأت و أنظمة التشغيل والسلامة التابعة لها.	تشغيل وصيانة و نظافة المرافق و المنشأت والمباني و الحدائق والمتنزهات .
تقديم خدمات الضيافة و الاعاشة .	تقديم الخدمات الزراعية (تشجير, زراعة , ري, صيانة , عناية , مكافحة)
تقديم خدمات جمع النفايات و التخلص منها .	تقديم خدمات مكافحة الآفات والحشرات والقوارض .

ومن ابرز عملائنا الذين تشرفنا بتقديم خدماتنا لهم على سبيل المثال لا الحصر :-

قد حصلنا على شهادات انجاز نظير العقود التي تم تنفيذها. كما نملك فريق هندسي و اداري متميز واجهزة فنية ومساندة مدعمة باسطول متكامل من المعدات الحديثة التي يتم تطويرها باستمرار بما يتماشى مع متطلبات العمل التوسعي في مشاريعنا التي تشهد نمواً متزايداً يوماً بعد يوم.

SPTC

شـركـة محـولات الطـاقـة السـعوديـة
SAUDI POWER TRANSFORMERS COMPANY

- SPTC is the first leading Saudi manufacturer for HV power transformers with capacity up to 150MVA, 230kV calss.

- SPTC is located in 2nd industrial city in Dammam and it is 100% Saudi owned by EIC (Electrical Industries Company).

For any query, contact us: sales@sptc.com.sa

EIC

GCC Lab

المختبر الفليجي

Services

- Power equipment testing
- Renewable energy systems testing
- Assets management
- Inspection
- Hydrocarbon and petrochemical testing
- Sustainability and energy optimization services
- Construction material testing
- Products certification
- Consumer goods testing
- Fire safety testing + HSSE services
- Calibration services
- Industrial cleaning services
- Training and certification
- OT cybersecurity services

Shareholders

Certified

ISO	9001	17020
	14001	17024
	45001	17065
		17025

٤٥ عامًا من البناء والإبداع
شريكك في تحقيق الطموح

شــركة فهــد حســين الدخيــل للمقاولات تأسست عــام ١٣٩٩ هـ كجزء من مجموعة الدخيل التجارية، تمتلك الشركة خبرة تتجاوز ٤٥ عامًا في تنفيذ مشاريع البنية التحتية والمقاولات العامة وتتميز الشركة بقدرتها على تنفيذ المشاريع العملاقة بأعلى معايير الجودة.

لماذا نحن ؟

✔ **تصنيف درجة أولى:** تنفيذ المشاريع الضخمة بكفاءة عالية
✔ **كوادر مؤهلة:** فرق عمل فنية وإدارية مدربة وذات خبرة
✔ **شهادات الجودة:** ISO 45001 و ISO 9001
✔ **علاقات قوية:** شبكة واسعة من الموردين ومقاولي الباطن
✔ **الملاءة المالية:** قدرة عالية على توفير الموارد اللازمة للمشاريع

خدماتنا

- ⚙ أعمال المقاولات العامة والإنشاءات
- ⚙ مشاريع البنية التحتية
- ☀ الطاقة المتجددة
- 🚧 أعمال الطرق والجسور
- 🔧 تشغيل وصيانة المرافق

شركاؤنا في النجاح

GACA — الهيئة العامة للطيران المدني — General Authority of Civil Aviation

أمانة منطقة المدينة المنورة — Madinah Regional Municipality

SAR — الخطوط الحديدية السعودية — SAUDI ARABIA RAILWAYS

وزارة التعليم — Ministry of Education

هيئة تطوير منطقة المدينة المنورة — Al Madinah Region Development Authority

وزارة المياه والكهرباء — MINISTRY OF WATER & ELECTRICITY

مرافق — MARAFIQ

هيئة الزكاة والضريبة والجمارك — Zakat, Tax and Customs Authority

معلومات التواصل

✉ info@f-aldakheel.com

📞 + 966 565676285

Transtek

Transform Your Asset, Inventory, & Maintenance Management Using AI-Powered Solutions.

All-in-One Solution.

mojodat Fixed Assets

- Full Asset Lifecycle Management
- One Touch for Mass Additions
- Mobile-Based Physical Count
- Assets Movement Tracking
- Custody controls
- Workflow Approval
- Book Depreciations
- Elimination Management
- Composed Assets

mojodat Inventory

- Categorization
- Unit of Measures Management
- Hierarchical Warehouse Location
- Transfer Between Warehouses
- Stocktaking
- Receipt Material
- Issue Material
- Cutting-Edge Mobile Application
- Livestock Reports with KPI

mojodat Maintenance

- Facility & Equipment
- Preventive Maintenance
- Work Ticket Management
- Request Portal
- Workshops Management
- Spare-Parts, Tools, & SOP
- Approval Workflow & Alerts
- Automated Meter Reading (IoT)
- Knowledge Base

mojodat Marketplace

- Streamlined Asset & Item Request Process
- Marketplace Management Portal
- Increase Asset & Inventory Usability
- Seamless Reporting & Analytics

+50 Partners

+1,500 Live Users

+10 Million Assets

+300 Recurring Clients

-دار القياس للتقييم-

شريكك في اتخاذ القرارات بثقة ودقة

قيم دقيقة لرؤى استراتيجية واضحة.

نبذة عن دار القياس للتقييم

تُعد شركة دار القياس للتقييم إحدى الشركات الرائدة في مجال التقييم بالمملكة، حيث تقدم خدمات متكاملة تشمل التقييم العقاري والتجاري، وتقييم الآلات والأصول، والجرد والترميز بمختلف أنواعها. نهدف إلى تعزيز الثقة والدقة في قرارات عملائنا الاستراتيجية من خلال تقارير احترافية تعتمد على أعلى المعايير الدولية.

نسعى لأن نكون الخيار الأول في مجال التقييم داخل المملكة وخارجها، معتمدين على فريق متخصص يمتلك خبرات واسعة وأدوات مبتكرة تُواكب التطور المستمر في القطاع. رؤيتنا المستقبلية ترتكز على التوسع والتطور، بما يضمن تقديم خدمات نوعية تُسهم في دعم التحول الرقمي وتحقيق النمو المستدام لعملائنا.

خدماتنا:
التقييم العقاري:
تقييم الأراضي السكنية والتجارية، المباني، المشاريع العقارية، الفنادق، والمنتجعات.

تقييم الآلات والمعدات:
إعداد تقارير دقيقة تشمل حالة المعدات، كفاءتها، العمر الافتراضي، وقيمتها السوقية.

التقييم التجاري:
تقدير القيمة السوقية للمشاريع، الشركات، العلامات التجارية، حقوق الملكية الفكرية، والتدفقات النقدية.

الجرد والترميز:
- **ترميز الأصول بأنظمة حديثة لتسهيل التتبع.**
- **إعداد قوائم جرد شاملة للأصول الثابتة والمنقولة.**
- **تحسين إدارة الأصول وزيادة الكفاءة.**
- **استخدام تقنية RFID لتتبع الأصول.**

تقييم الأصول والممتلكات:
تقدير دقيق للممتلكات مثل الأثاث، المعدات الإلكترونية، والمركبات.

لماذا نحن دار القياس؟
- التزامنا بمعايير التقييم الدولية (IVS).
- تقارير دقيقة ومفصلة تلبي احتياجات العملاء.
- فريق متخصص بخبرة واسعة في مختلف القطاعات.
- استخدام أحدث التقنيات والأنظمة لضمان جودة الخدمة.

دار القياس للتقييم هي شريككم الموثوق لتحقيق رؤية واضحة وقيمة دقيقة لأصولكم
ابدأ رحلتك نحو قرارات استراتيجية موثوقة.

بيانات التواصل:

📞 920011513

🌐 www.daralqias.com

📧 info@daralqias.com

KHARETAT AL - ENMAA

NAMAA

WE SEEK CREATIVE THINKING AND INNOVATION IN EVERY SINGLE ASSIGNMENT WE WORK ON

Asset Management

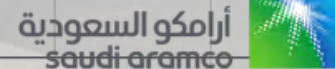Transportation

Management Consulting

Urban Planning

Technology

#01

PAVEVISION
FIRST SAUDI-MADE
AI BASED SOLUTION

Pavevision has joined the Largest Fleet of Road Asset Management Data Collection Equipment in the kingdom, owned by a Private company; Kharetat Al Enmaa

PART OF OUR VALUED CLIENTS!

Madinah Regional Municipality

Ministry of Culture

قطار الرياض
riyadh metro

أمانة منطقة حائل
HAIL REGION MUNICIPALITY

أمانة العاصمة المقدسة
HOLY MAKKAH MUNICIPALITY

يوم NEOM

أرامكو السعودية
saudi aramco

وزارة الشؤون البلدية والقروية والإسكان
Ministry of Municipal Rural Affairs & Housing

وزارة الإسكان
MINISTRY OF HOUSING

وزارة النقل والخدمات اللوجستية
Ministry of Transport and Logistic Services

الهيئة الملكية لمدينة الرياض
ROYAL COMMISSION FOR RIYADH CITY

هيئة تطوير منطقة المدينة المنورة
Al Madinah Region Development Authority

ABOUT US

For over four decades, ACGC's Construction & Refurbishment business has successfully delivered numerous iconic projects across the Kingdom of Saudi Arabia.

ACGC's Design-Build capabilities as a Construction General Contractor have successfully delivered significant projects, including large commercial buildings, airports, mega aircraft shelters, large defence buildings, large operations-type buildings, large civil infrastructure, large residential projects and Mechanical, Electrical and Plumbing (MEP) Projects.

Our consistent service with repeat clients affirms our credibility, reliability, and unwavering commitment to excellence.

Additionally, our Operations & Maintenance plus Facilities Management business have provided steadfast services to facilities across the kingdom, with many partnerships exceeding twenty years. This demonstrates our dedication to long-term relationships and superior service. ACGC's Operation & Maintenance plus Facilities Management business offers a broad range of services across various industries, including airports, large defence bases, power plants, hospitals, large defence operational buildings, industrial buildings, and aircraft shelters, large residential developments and remote site staff accommodations, etc. We are on a mission to expand our client base, aiming to offer our unparalleled services to major government, semi-government, and private entities. By doing so, we strive to play a significant role in contributing to the Kingdom's Vision 2030, fostering growth, innovation, and sustainable development throughout the nation.

ACGC delivered significant large commercial buildings, airports, mega aircraft shelters, large defence and operations type building, large infrastructure, and large residential projects.

VISION

Premier construction and Facilities Management contractor committed to supporting the Kingdom Vision 2030 mandate by delivering, managing, and operating iconic projects safely, on time, to world-class standards, and in alignment with the nationalization strategy.

MISSION

Serving multiple clients across diverse product lines and delivering excellence in every aspect of our services while fostering sustainability, innovation, and the highest industry safety standards.

VALUES

We Deliver Unparalleled CUSTOMER Satisfaction:

Our customers are at the heart of everything we do. We are deeply committed to not just meeting but exceeding their expectations. By actively listening to their needs and fully understanding their goals, we tailor our solutions to provide exceptional value and ensure their complete satisfaction at every stage of our partnership. We believe that respect, transparency, and proactive communication are the keys to building and maintaining strong, lasting relationships with our customers.

We Take Responsibility for QSHE (Quality, Safety, Health, and Environment):

Excellence is our standard, and continuous improvement is our mission. We are unwavering in our commitment to upholding the highest standards of quality, safety, health, and environmental responsibility. Every team member plays a critical role in ensuring that our work not only meets but exceeds industry benchmarks. We actively promote a culture of safety and well-being, where each individual is empowered to take responsibility for their actions, ensuring that our operations are safe, healthy, and environmentally sound.

We Uphold INTEGRITY in Every Aspect of Our Work:

Integrity is the cornerstone of our business. We are committed to the highest ethical standards, holding ourselves accountable for our actions and decisions. This means being honest, fair, and transparent in all our dealings, both internally and externally. We respect our customers, colleagues, and company resources, ensuring that we consistently act with integrity in every situation. Our reputation for integrity is a valuable asset, and we are dedicated to preserving it through responsible and ethical behaviour.

We Cherish and Empower Our PEOPLE:

Our people are our greatest asset, and we are committed to fostering an environment where everyone feels valued and respected. We celebrate the diversity of our team, recognizing that the unique perspectives and contributions of each individual drive our success. We are dedicated to creating a positive, inclusive workplace where openness, trust, and collaboration thrive. By investing in our people, we empower them to achieve their full potential, contributing to both their personal growth and the success of our organization.

We Value Our SUPPLIERS as Strategic Partners:

Our suppliers are essential partners in our success, and we are committed to building strong, mutually beneficial relationships with them. We treat our suppliers with the same level of respect and fairness that we offer our customers, ensuring clear communication, equitable agreements, and honest feedback. By collaborating closely with our suppliers, we create a foundation of trust and reliability that enhances the quality and efficiency of our operations. Together, we work as a unified team to achieve shared goals and drive long-term success.

> ريادة في تقديم حلول شاملة ومتكاملة لخدمة المجتمـع وتعزيــز جودة الحيــاة

تكوين

شركة تكوين الوطن
TAKWEEN ALWATAN CO.

نبذة عنــــا

تأسست شركة تكوين الوطن المحدودة عام ١٤١٣ هـ على يد المؤسس الراحل الأستاذ نصار بن عقاب آل زيد – رحمه الله – لتكون واحدة من أبرز الشركات الوطنية في تقديم الحلول المبتكرة والخدمات المتكاملة في مختلف القطاعات.

انطلقت مسيرتنا من رؤية طموحة وإبداعية لخدمة المجتمع، وها نحن اليوم نواصل الإنجاز والتطوير بشغف وإصرار.

مجالات عملنا

01 التشغــيل والصيانـــة

- تشغيل وصيانـــة المرافـــق العامـــة والحكوميـــة.
- خدمات النظافـــة الشاملـــة وإدارة البنية التحتيـــة.
- صيانة وإدارة شبكات تصريف مياه الأمطار والسيول.

02 النقل العــــام وخدمــات النقــل

- تشغيل أسطول حديث من الحافلات VIP المجهزة بأحدث التقنيات مثل أنظمة المراقبة والكاميرات الداخلية والخارجية وGPS.
- دعم مشاريع النقابة العامة للسيارات وهيئة النقل.

03 مشاريع البنيـة التحتيـة

- تنفيذ شبكات المياه والصرف الصحي بأعلى المعايير.
- تطوير مرافق أساسية مثل دورات المياه في المشاعر المقدسة.

04 إدارة النفايات والإصحـاح البيئي

- خدمات نظافة المدن وإدارة المخلفات بكفاءة واحترافية.
- برامج مكافحة الأوبئة والآفات لضمان بيئة صحية وآمنة.

05 التقنية وحلول المراقبة

- توريد وتركيب أنظمة المراقبة التلفزيونية.
- دعم التقنيات الحديثة لتحسين كفاءة المرافق والبنية التحتية.

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KINGDOM OF SAUDI ARABIA

رؤيتنــا

نواصل التوسع في مشاريعنا وخدماتنا مع الحفاظ على أعلى معايير الجودة والاحترافية، متطلعين إلى تعزيز دورنا في بناء مستقبل مشرق ومستدام.

لماذا تكوين الوطن؟

- **خبرة واسعة:** أكثر من ثلاثة عقود من الإنجازات المتميزة.
- **كفاءة عالية:** فرق عمل مؤهلة ومعدات متقدمة.
- **ابتكار مستمر:** حلول متطورة تتماشى مع رؤية المملكة ٢٠٣٠.
- **التزام مجتمعي:** تحسين جودة الحياة وخدمة المجتمع في مكة المكرمة والمشاعر المقدسة.