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EMERGING TECHNOLOGIES

WHAT IS 7X24 EXCHANGE?

7x24 Exchange is the leading knowledge exchange for those who design, build, operate and maintain mission critical enterprise information infrastructures. We are a not-for-profit organization seeking to promote dialogue among industry professionals to address the many challenges facing owners and operators of these facilities. In addition to the ever present challenge of maintaining and improving end-to-end reliability, addressing the challenges of energy efficiency and sustainability and the potential for increased regulatory oversight have become a major focus of our membership.

The organization was founded on the assumption that professionals involved with data center uptime and operational issues often work in isolation when dealing with strategic, technical, budgetary, regulatory and career issues. This often results in expensive, time consuming, and, sometimes, painful trial and error efforts. 7x24 Exchange members work together to advance the state-of-theart by sharing best practices, lessons learned, and evolving strategies to address the challenges of infrastructure reliability and industry leading energy efficiency. Armed with this information members are enabled to proactively communicate, to technical peers, non-technical team members, clients and corporate management, the solutions necessary to drive operational efficiency and protect their companies' information lifelines.

THE GOAL OF 7x24 EXCHANGE CONFERENCES

The field of mission critical operations continues to evolve. Before its founding in 1989 as the Uninterruptible Uptime Users Group, learning how to deal with reliability and operational issues largely resulted from individual trial and error. Continuing this random rate of reliability improvement increasingly restricts the potential productivity of the large and rapidly growing investments in computer and communication infrastructure. Adding to the challenge has been the rapid growth in energy demand and the ever increasing cost of energy. With 7x24 operations now more common, how much higher will availability requirements be in five years? How much will these facilities cost to operate? How will environmental and regulatory concerns impact operations? How can cost effective, reliable responses be assured? Addressing, and, hopefully, answering these and related strategic guestions, 7x24 Exchange conferences provide stimulating discussion forums. Collectively, we know much about the future options and alternatives available. With 7x24 Exchange, that knowledge can be shared. All program elements aim to increase the reliability and availability of an enterprise's information infrastructure by presenting case studies, new ideas, techniques, equipment, and tools. Open dialogue between attendees and presenters is encouraged throughout. Further, by involving the many specialists from end users to service providers to equipment manufacturers in both formal and informal sessions, the experience is rewarding and enjoyable for all. This conference is designed for anyone involved with 7x24 infrastructures -IT, data center, disaster recovery and network/telecommunication managers; computer technologists; facility or building managers, supervisors and engineers. Vendors, consultants, or anyone concerned with uninterrupted access to critical information also will find the conference of value. Attendees and their organizations benefit from the conference because proactive plans and cooperation from diverse

corporate functions are needed to improve reliability. By promoting a dialogue and clarifying the synergies among functions, past conferences have enabled teams of attendees from a given organization to better communicate the critical importance of a proactive approach to continuous uptime. Attendees are also able to participate in breakout sessions and network with other professionals in similar companies/industries with like problems. Conference attendees benefit in three ways: professional development and advancement; increased recognition of their function's importance; and exposure to new ideas, contacts and resources. CEU credits are also available.

First-time attendees often discover that many companies face similar, if not identical, technical and organizational challenges in their quest for higher availability levels. 7x24 Exchange conferences provide insights into what is being planned and executed by others to mitigate or eliminate downtime risks. Recommended changes can then be justified, both on their practical merits and in the context of business cases that have been successful elsewhere.

WHAT IS A TUTORIAL SESSION?

7x24 Exchange has been offering tutorial sessions for many years. These tutorials are designed to deliver value to a broad range of participants. Whether your need is advanced training on a specific topic of the day or a refresher course on fundamental concepts, there is a tutorial that will meet your need. Almost all of 7x24 Exchange general session presentations are geared towards those with an advanced understanding of the concepts that will be presented. The tutorials are intended to complement the Monday through Wednesday general session presentations and help each attendee deepen their level of comprehension.

2024 FALL CONFERENCE EMERGING TECHNOLOGIES END-TO-END RELIABILITY: MISSION CRITICAL FACILITIES



Welcome Reception at the Spring Conference

SUNDAY OCTOBER 20

1:00 P.M. – 9:00 P.M. Registration

6:00 P.M. – 9:00 P.M. Welcome Reception

Join us for a reception with open bar and buffet dinner accompanied by music. This is an excellent opportunity to dialogue with conference presenters, meet new people, network, welcome first-time attendees, renew old acquaintances, and meet the board members.

Sponsored in part by:





Speakers delivering a presentation at the Spring Conference

EMERGING TECHNOLOGIES

MONDAY OCTOBER 21

7:00 A.M. – 4:00 P.M. Registration & Breakfast

Check in, pick up your name badge, conference materials and enjoy a hot buffet breakfast.

8:00 A.M. – 8:30 A.M. Welcome and Opening Remarks

Bob Cassiliano, 7x24 Exchange chairman, will open the conference, provide an overview, review meeting logistics and address general housekeeping items.



Bob Cassiliano

Chairman & CEO 7x24 Exchange International

8:30 A.M. – 9:30 A.M. Conference Keynote: The Great Progression: The Story of America & the World from 2025 to 2050

The can-do optimist Peter Leyden uses this talk to counter all the pervasive doom and gloom narratives and make what he calls a *Positive Reframe* of what's actually been happening in recent decades and what's likely to emerge in the decades to come. He tells the story of real progress in America and the world today and great progress that lies just ahead, based on his recent magazine piece, *The Great Progression, 2025 to 2050*. This talk places our current era in the broader context of American history and makes a compelling case that we're heading into another period of great progress that will solve many of our greatest challenges.



Peter Leyden

Futurist, tech expert, strategic foresight advisor, former WIRED managing editor & serial entrepreneur

9:30 A.M. – 10:00 A.M. Refreshment Break

10:00 A.M. – 11:00 A.M. From Chip Design to Operations: Driving Sustainable Data Center Transformation with AI and Digital Twins

The presenters will review how the synergy of digital twin technology and AI is spearheading a sustainable revolution in data centers. This session will reveal how collaborative innovations are redefining efficiency and sustainability in the tech scene. The talk will dive into the connection of chip design and operational excellence and discover a future where technology champions sustainability. This presentation is a pathway to a resilient and green future, driven by a commitment to pioneering solutions for our planet. Join the journey towards setting new global standards, for a world where technology and sustainability converge.

Ciaran Flanagan

Global Head of Data Center Solutions Siemens

Dion Harris

Director of Accelerated Data Center GTM NVIDIA

11:00 A.M. – 12:00 P.M. The Impact of 5G and Narrowband IoT (NB-IoT) Technology in Data Centers Infrastructure and Customers

The evolution of IoT technologies has reshaped the landscape of data centers, significantly expanding their operational capacities and data handling capabilities. Among these innovations, Narrowband IoT (NB-IoT) stands out as a pivotal advancement, offering substantial advantages in terms of efficiency, deployment simplicity, and cost savings for both operations and installations. The presentation will explore how NB-IoT, standardized by 3GPP, is designed to provide efficient connectivity for a multitude of IoT devices over long distances. This technology drastically reduces power consumption and extends device battery life to over a decade in some cases. It will detail how such efficiency lowers operational costs associated with maintenance and energy consumption, enhancing the overall sustainability profile of data centers. This is particularly crucial in Edge data center applications, where efficiency and sustainability are paramount, and aligns with Environmental, Social, and Governance (ESG) initiatives.

Luke Dalske

Co-Founder/COO Radix IoT, LLC

Michael Skurla

Co-Founder/Digitization Consultant Radix IoT, LLC

12:00 P.M. - 1:30 P.M. Lunch and Networking

1:30 P.M. – 2:30 P.M. WiMCO[®] Panel - Unveiling the Future: Embracing Innovation in Modular Construction, Sustainability and Operations Efficiency

Join us for an enlightening session where industry leaders will delve into the cutting-edge realm of modular construction, sustainable solutions and operations. In this dynamic session, experts will explore the fusion of innovative modular construction, sustainable and operational best practices shaping the future landscape of data center infrastructure.

MODERATOR:

Juli Ierulli

Strategic Account Manager – Midwest Environmental Air Systems and Vice President 7x24 Exchange International

PANELISTS:

Casey Eldringhoff Data Center Engineering Operations Cluster Manager Amazon

Amy Marks SVP, Innovation Compass Datacenters

Katie McGinty VP Sustainability Johnson Controls

2:30 P.M. – 3:00 P.M. Refreshment Break

3:00 P.M. – 4:00 P.M. Concurrent Breakout Sessions

Breakout A: Mega Powers Reunite – Technology Deep Dive

Batteries are always a highly charged topic. An industry leading panel of battery manufacturers and OEM 39s are reuniting to field all the battery and technology questions attendees can think of related to lead lithium and nickel-zinc technologies. With this much power in one room this breakout will be electrifying!

MODERATOR:

Yigit Bulut

Sr. Technical Manager, Electrical Engineering, Mission Critical Facilities EYP Mission Critical Facilities, Part of Ramboll

PANELISTS:

James Li

General Manager of UPS, Datacenters & Telecom Ampace Lithium Batteries

Chuck Mathias Senior Director – Sales East Penn Manufacturing Co.

Jay Shipman Product Manager Vertiv

Brandon Smith

Director of Product Management ZincFive

Breakout B: Debunking Myths About Hydrogen-Powered Data Centers

In an era where sustainability is no longer a choice but a necessity, the topic of hydrogen-powered data centers has sparked considerable debate. While hydrogen fuel cells are often seen as the technology of the future, many data center operators have significant misunderstandings about their viability and practicality. Hydrogen-powered data centers are not just a pipe dream; they are a reality and a viable, practical solution to some of the most pressing issues we face today in terms of energy consumption and environmental impact. Attendees will learn about advancements in hydrogen technology, as well as the long-term benefits and short-term challenges of implementation, from the only team that has brought an off-grid, sustainable, modular, built-to-suit data center with fully renewable power and zero emissions—purposebuilt for Al—to market.

Yuval Bacher CEO & Founder

EdgeCloudLink

Breakout C: BIM There, Done That: Merging Wisdom with New Technologies

Unlock the full potential of Building Information Modeling (BIM) in revolutionizing data center design and operations by merging proven expertise with innovative technology. This expert panel will delve into BIM's strategic role at different design stages, highlighting stakeholder expectations and common pitfalls. Learn how to navigate the complexities of multi-party collaboration, balance real-time updates with fixed issuances, and transition models from design to construction and operations via Digital Twins. Investigate AI's role in the future of BIM workflows, augmented experiences, and gain insight into the next generation of BIM and how we are shaping tomorrow's built environments.

MODERATOR:

Leslie Dunkley Partner

TLM Group

PANELISTS:

Rob LoBuono

Senior Associate, NE Critical Facilities Practice Area Leader Gensler

Richard McFadden

Jaros, Baum & Bolles

Dustin Ridley

SW Region VDC Leader DPR Construction

4:00 P.M. – 5:00 P.M. WiMCO[®] Networking Reception

Join the National Women in Mission Critical Operations Committee for a networking reception sponsored by: Kimley »Horn

6:30 P.M. – 9:30 P.M. Marquis Plus+ Partner Showcase

Saddle Up – Vegas Meets the Wild West!



Monday, October 21, 6:30 P.M. – 9:30 P.M. **Marquis Plus+ Partner Showcase**

Saddle Up

29 7 28 12 35 3 26

and some good old gambling as our partners display their latest and greatest equipment, products and services available to assist you in your day-to-day data center operational needs.

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SPECIAL THANKS TO OUR MARQUIS PLUS+ PARTNERS AS THIS EVENT WOULD NOT BE POSSIBLE WITHOUT THEIR SUPPORT.

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TUESDAY OCTOBER 22

7:00 A.M.– 8:30 A.M. Breakfast & Registration

8:30 A.M. – 9:00 A.M. Opening Remarks

Bob Cassiliano will review day one highlights and give a 7x24 Exchange update.

Presentation of the Lifetime of Service Award

7x24 Exchange International will present the Lifetime of Service Award to Dennis Cronin, Founding Member of 7x24 Exchange International for his lifelong career and commitment to the mission critical industry. Bob Cassiliano, Chairman & CEO of 7x24 Exchange International will recognize Dennis for his leadership and extraordinary service to the mission critical industry.



Dennis Cronin

Board Member, Mission Critical Global Alliance and Founding Member, 7×24 Exchange International

9:00 A.M. – 10:00 A.M. Keynote: From Artificial Intelligence to Real Stupidity – Security in the 2020s

Taking a cynical look past the current obsession with AI, Kevin takes us down a journey of enlightenment as he takes a look at the sometimes-bizarre world of Information Security in the modern age. Covering topics such as "the largest IT outage in history" and some of the surprising ways that plain old stupidity still rules, Kevin's talk is sure to fascinate and amuse.



Kevin Kealy Global Chief Information Security Officer Light & Wonder

10:00 A.M. – 10:30 A.M. Refreshment Break

10:30 A.M. – 11:30 A.M. Using a Sustainability Index to Align Targets and Increase Transparency in the Data Center Industry

The need for a standardized sustainability assessment tool for new data center builds is growing, driven by factors such as environmental concerns, regulatory compliance, corporate sustainability goals, operational efficiency, and technological advancements. With these factors converging, best practices are emerging to measure and standardize environmental considerations in construction. Utilizing a Sustainable Index establishes baseline measurements for data center aspects and aligns performance goals with the environment and communities they serve. The Index acts as a unifying mechanism for design teams, helping them stay organized and focused on their goals and the interrelationships between various aspects.

J.D. Lambert

Sustainable Design Leader Mission Critical, HKS

Elizabeth Larsen

Senor Sustainability Engineer Bala Consulting Engineers

Karen Petersburg

Vice President, Data Center Development & Construction PowerHouse Data Centers

11:30 A.M. – 12:30 P.M. Panel: Skills to Scale for Hyperscale -Strategies for Resolving Skill Shortages and Developing the Talent Pool

This session will focus on addressing skill shortages and developing a robust talent pool necessary for building hyperscale data centers. With projections indicating significant global data center growth, it's crucial to cultivate a workforce adept in the latest technologies. Strategies will be discussed for upskilling current employees, attracting new talent, and implementing comprehensive training programs to meet the increasing demand, particularly in remote areas where industry presence and talent are limited. Panelists will explore innovative approaches to workforce development, ensuring a smart, efficient, and scalable operation to support the rapid expansion of data infrastructure globally.

MODERATOR:

Tashbeeb Shahid Senior Director, Global Solutions, Black Box

PANELISTS:

Vince Hoover Regional Director, South Central-Mountain Corning Optical Communications

David Richards President, BICSI and

Quality Training Manager for Global Department, Black Box

Buddy Rizer Executive Director

Loudon County Department of Economic Development



EMERGING TECHNOLOGIES

12:30 P.M. – 2:00 P.M. Lunch & Networking

2:00 P.M. – 3:00 P.M. Scaling Data Center Development Through Program Management

As the demand for data centers increases, developers face the challenge of rapid and scalable growth. The industry is expanding not only in the Mid-Atlantic but also across North Carolina, South Carolina, Tennessee, and Texas. To manage this growth effectively, developers should consider adopting a Program Management approach. This strategy ensures efficient site selection, thorough due diligence, and standardized design processes, allowing developers to manage multiple projects simultaneously, control costs, and accelerate speed-tomarket. Partnering with program management experts enables developers to customize processes to their specific needs and achieve ambitious goals.

Vanessa Kennedy VP of Development

STACK Infrastructure

Michael O'Shaughnessy Associate Bohler

3:00 P.M. – 3:30 P.M. Refreshment Break

3:30 P.M. – 4:30 P.M. Concurrent Breakout Sessions

Breakout A: Data Centers Coming to a Neighborhood Near You

Although nearly everyone in the world depends on data centers, very few people know what they are, how they operate, where they're located, and why we need them to stay online. The mystery surrounding data centers has led communities to view them as unattractive, boxy buildings that displace open fields and drain city electric and water reserves. Data center experts in design and development will debunk common myths and separate fact from fiction, providing tips on engaging neighbors and the surrounding community to help them understand the value of a data center today.

Denitza Arguirova

Associate, Data Center Dev<mark>elopment</mark> Provident Realty

Dutch Wickes

Principal and Global Mission Critical Practice Leader Ci Design, Inc

Breakout B: Understanding the Latest and Greatest Data Center Construction Codes and Standards

This session will focus on the opportunities embedded in the Institute of Electrical and Electronics Engineers (IEEE) Industry Applications Society (IAS) concerning construction codes and standards for data centers. Conference attendees will gain a comprehensive understanding of how the IEEE IAS—particularly its Commercial Power Systems Department (CPSD) and the IEEE 3000 Standards—can be instrumental in navigating and implementing construction standards and recommended practices for data centers. Key areas covered in this session will include power system design, analysis, protection, and reliability. These and other areas are essential for constructing a highly reliable data center.

Dr. Qais Alsafasfeh

Engineering Leader Schneider Electric and Member IEEE Datacenter Subcommittee

William Schaumann

Senior Associate Electrical Engineer Burns & McDonnell and Secretary IEEE IAS Datacenter Subcommittee





Spring Conference attendees learning

Breakout C: Techniques in Minimizing Risk and Evading Fear of New Technologies

Emerging technologies for data centers, such as AI-driven automation and edge computing, present significant opportunities but also evoke concerns. Key issues include cybersecurity threats as connecting more devices for energy management and efficiency increases vulnerability to attacks and data privacy issues. Additionally, there are worries about the environmental impact due to increased energy consumption and electronic waste even with AI optimizing resource usage and improving efficiency. Emerging technologies in data centers must align with Environmental, Social, and Governance (ESG) criteria to ensure sustainable and responsible growth. Environmentally, this involves adopting energy-efficient hardware, utilizing renewable energy sources, and implementing advanced cooling systems to reduce carbon footprints and mitigate climate impact. Does ESG threaten digital transformation? Presenters will address these concerns and share a forward-looking mindset as new technologies come online.

Suzanne Bennett

Operations Manager Source Blue/Turner Construction

Kevin Burke

Global Electrical Platform Manager Source Blue/Turner Construction

6:30 P.M. – 9:30 P.M. An Evening with Wally Palmar & Friends



Conference Keynote kicking off the Spring Conference



Spring Conference speaker delivering a technical presentation



TUESDAY, OCTOBER 22 | 6:30 P.M. – 9:30 P.M.

AN EVENING WITH WALLY PALMAR & FRIENDS



WALLY PALMAR

Lead Singer and Co-Founder of The Romantics™ Talking in Your Sleep - What I Like About You, Member of The Empty Hearts and Ringo Starr's ALL-STAR BAND



ALEX LIGERTWOOD Former Lead Vocalist Santana[™] 1979-1994 All I Ever Wanted, Black Magic Woman, Winning and Hold On



MIKE RENO Lead Singer, Loverboy™ Everybody's Working for the Weekend, Almost Paradise, Turn Me Loose

THE EVENT WILL START WITH A NETWORKING DINNER AND WILL CONCLUDE WITH A HIGH ENERGY CONCERT!



WEDNESDAY OCTOBER 23

8:30 A.M. – 8:45 A.M. Opening Remarks

Bob Cassiliano will review highlights from day two and address housekeeping items of interest.

8:45 A.M. – 9:45 A.M. Keynote: Options to Address the Rising Challenge of Sustainability and Water

As temperatures rise and water scarcity and availability change under climate and population challenges, data center operators need to reassess their cooling strategies and water consumption profiles. Water is a local, facility-level issue with reputational and operational risks. This session explores low water use, water management strategies, and cooling system innovations to help operators navigate the sustainability and reliability implications associated with water use.



Jay Paidipati Vice President, Sustainability Program

Uptime Institute

9:45 A.M. – 10:15 A.M. Refreshment Break

10:15 A.M. – 11:15 A.M. Years of Lessons Learned

With decades of experience, the presenters will share some of their most notable lessons learned covering data center incidents, their causes and analysis. This will include design caused issues, how to burn up a cooling tower, commissioning – disaster or salvation, and as many others as time allows covering all aspects of data center design, construction, commissioning and operations.

Dennis Cronin

Board Member Mission Critical Global Alliance & Founding Member, 7x24 Exchange International

Rich Garrison

Partner AlfaTech

11:15 A.M. - 12:15 P.M.

How Tech and Energy Companies Can Work Together to Solve the Data Center Energy Challenge

Tech companies aggressively pursuing the advancement and proliferation of AI have hit a brick wall—insufficient power, especially green power. That brick wall is stereotypically slowmoving utilities and other energy companies. How can these two—often considered polar opposites in operations and culture—work together to respond to the challenge?

Colin Cagney

Director, Infrastructure, Capital Projects and Climate KPMG

12:15 P.M. Conference Adjourns





1. CONFERENCE REGISTRATION

Complete a Conference Registration Form for each participant online or email or fax a copy of the Conference Registration Form on the next page to:

7x24 Exchange International

Email: conferences@7x24exchange.org Fax: 212-645-1147 www.7x24exchange.org

To guarantee early bird rate, registrations must be received by September 20th.

2. HOTEL RESERVATIONS



5350 East Marriott Drive, Phoenix, AZ 85054

To take advantage of 7x24 Exchange's special rates at the JW Marriott Desert Ridge Resort & Spa you can visit the conference website at www.7x24exchange.org to make an online reservation, or call JW Marriott Desert Ridge Resort & Spa Hotel directly at 1-800-898-4527 and ask for the 7x24 Exchange Conference room rate of \$295.00/night for a single or double plus tax.

Please refer to 7x24 Exchange 2024 Fall Conference when calling.

Please Note: Room reservations are available on a first come, space available basis. Space permitting, this block will be available until September 20th or until rooms are sold out, whichever comes first. Register for the conference and make your hotel reservations early, as the block will likely sell out. Previous 7x24 Exchange conference room blocks have sold out. 7x24 Exchange is not responsible for matching rates, finding additional rooms or providing transportation to hotels that have not been contracted by 7x24 Exchange once the block is sold out. In the event of a sellout 7x24 Exchange will recommend nearby accommodations.





VENDOR/CONSULTANT POLICIES & PROCEDURES

HOSPITALITY SUITES

Due to the success of the Marguis Plus+ Partner Showcase, hospitality events will not be permitted at this conference. All are invited to join us on Monday, October 21st for another spectacular event.



2024 FALL CONFERENCE EMERGING TECHNOLOGIES END-TO-END RELIABILITY: MISSION CRITICAL FACILITIES

REGISTER ONLINE TODAY AT **WWW.7X24EXCHANGE.ORG**

QUESTIONS? CALL 646-486-3818

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