



**7x24**  
**Change**

The end-to-end reliability forum.

[www.7x24exchange.org](http://www.7x24exchange.org)



**2003 Fall Conference**

**END TO END RELIABILITY:**

**MISSION CRITICAL**

*Register before October 17th for a chance to win  
an HP Photosmart 935 Digital Camera!*



November 16-19, 2003 • The Westin La Cantera Resort • San Antonio, TX



## ***What is 7x24 Exchange?***

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The leading knowledge exchange for those who design, build, use and maintain mission-critical enterprise information infrastructures, *7x24 Exchange* is a not-for-profit organization seeking to improve end-to-end reliability by promoting dialogue among these groups.

Founded on the assumption that often professionals involved with data center uptime issues work in isolation when dealing with technical, budget, political, and career issues. As a result of expensive, time-consuming, and, sometimes, painful trial and error processes, innovative practitioners evolved unique and creative ways of solving problems and building the organizational support needed for their implementation. However, many have been stymied because they did not have access or know how to communicate potential risks to senior management to avoid a downtime disaster occurrence.

*7x24 Exchange* members work together to advance the state-of-the-art in infrastructure reliability. By collecting and disseminating data on safeguarding information systems and alerting top management to the importance of proactive measures, members can protect their companies' information lifelines.

## ***The Goal of 7x24 Exchange Conferences***

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The field of uninterrupted uptime has no textbooks. Before its founding in 1989 as the *Uninterruptible Uptime Users Group*, learning how to deal with uptime issues largely resulted from individual trial and error. Continuing this random rate of reliability improvement would increasingly restrict the potential productivity of the large, growing investment in computer and communication hardware and systems. It also would interfere with the increasingly critical dependence on information accessible through computers.

With 7x24 operations now common, how much higher will availability requirements be in five years? How can cost-effective, reliable responses be assured? When is a centralized application site requiring ultra-high availability viable? Addressing, and, hopefully, answering these and related strategic questions, *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 and tools. Open dialogue between attendees and presenters is encouraged throughout. Further, by involving the many specialists from user and supplier/service organizations with formal and informal sessions, the experience is rewarding and enjoyable for all.



## ***Who Should Attend and Why***

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This conference is designed for anyone involved with 7x24 infrastructures — IS, 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 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. Team members also were able to cover 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. First-time attendees often discover that many companies face similar, if not identical, technical and organizational problems in their quest for higher availability levels. Those still unaware of this often view their situations as unique. However, they learn there are many common downtime risks and failure modes with solutions clustering around universal ideas and attitudes. 7x24 Exchange conferences provide insights into what is being planned and done 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 arguments that have been successful elsewhere.

Conference attendees will receive a comprehensive three ring binder including all of the conference presentations. In addition, attendees will receive a copy of the presentations on CD shortly after the conference.

## ***SUNDAY, NOVEMBER 16***

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8:30 a.m.

### **Tour A – Active Power Plant Tour**

Buses will depart from the hotel at 8:45 a.m. and return at approximately 1:45p.m. Tour of the 100,000 square foot facility will include a live demo of equipment in the test bay, coupled with the genset outside.

12:00 noon – 10:00 p.m.

### **Registration**

2:30 p.m. – 4:45 p.m.

### **Tutorial Session A: Fire Protection Technology and Design Basics for Mission Critical Site Applications**

This program is a tutorial designed to educate attendees about various fire protection concepts and technologies, how they are applied in mission critical environments and the design parameters involved. This tutorial will describe and compare various types of technologies within the general categories of control, detection, and alarm and suppression systems and provide information on emerging technology as well as updates on existing technology. The program will explain pertinent sections of the National Fire Codes and fire dynamics within data centers, telecom switches, etc. and provide advice for the elimination of operational problems with fire protection systems.

**Brian K. Fabel, P.E.**  
**Director-National Accounts**  
**Orr Protection Systems, Inc.**



2:30 p.m. – 4:45 p.m.

### **Tutorial Session B: Fluid Mechanics 101**

This tutorial session will introduce basic concepts of air velocity, laminar and turbulent airflow, pressure, and momentum balance that are part of the heat transfer characteristics typically found in data centers. The material presented at this session can be used to study the effects of variables, such as the positions of CRAC units and perforated tiles; the percent open area of the perfs, raised floor height, and any under floor partitions/blockages. The analysis can then be used to show the simulation of failure scenarios in which the modified flow distribution resulting from failure of one or more CRAC units can be calculated. The tutorial will include a hands-on session on laptop computers where participants can set up data center layouts and calculate flow distribution as one example. Please bring a laptop that runs one of the following Windows operating systems - 95/98/Me/NT/2000/XP.

**Suhas V. Patankar, Ph.D.**

**President**

**Innovative Research, Inc. and**

**Professor of Mechanical Engineering**

**University of Minnesota**

3:30 p.m. – 3:45 p.m.

### **Refreshment Break**

5:00 p.m. – 10:00 p.m.

### **Registration (continued)**

Pick up conference materials and name badges to help reduce Monday morning congestion

6:00 p.m. – 10:00 p.m.

### **Welcome Reception**

Join us for a buffet reception with open bar accompanied by soft 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.

## **MONDAY, NOVEMBER 17**

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7:00 a.m.

### **Registration & Continental Breakfast**

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.

9:00 a.m.

### **Keynote Address: What Happened to Telecom?**

During its second century as a critical part of the global economy, the telecommunications industry has been at the center of one of the largest financial expansions and contractions in the history of business. This presentation will trace the roots of this industry through the present, focusing on key regulatory, technology and competitive events. But more importantly, what does the future hold for such a critical part of the world's infrastructure?

**Ron Vidal**

**Vice President**

**Level 3 Communications**

10:00 a.m.

### **Refreshment Break**

10:30 a.m.

### **How a Manufacturer's Quality Management System Adds to Mission Critical Reliability**

The philosophy of inspection versus a true quality management system (QMS) will be presented by discussing the ISO 9001:2000 QMS and its impact on product quality. The presentation will discuss the events after WWII that lead to the United States losing its leadership role in manufacturing, the impact this had on the industry, and the beginning of the quality revolution. The basic elements of ISO9001:2000 will be explained and how its application is appropriate for any process that contributes to mission critical reliability.

**M. Barry Portnoy**

**Quality Assurance Administrator**

**Russelectric Inc.**

11:15 a.m.

### **Risk Management Initiatives For Information Technology and Facilities Managers**

Risk management organizations within public firms are evolving beyond their former focus on credit and market risk. The role of risk management is expanding to encompass:

- ◆ Internal risk management: Disaster recovery, business continuity, systems evaluation and operational reviews for internal resources
- ◆ Outsourcing risk management: Internal controls, resiliency, interfaces of external service providers
- ◆ Transition risk management: Data center relocations, consolidations, enterprise application deployments, mergers and acquisitions

The rules for global banks arising from the Basal II Accord as well as regulations such as Sarbanes-Oxley Act for all public firms are setting the standard for many of the companies represented in 7x24 Exchange making this an important topic.

**Philip S. Michel**  
President  
St. John's Consulting Group

12:00 p.m.

### **Buffet Lunch**

1:30 p.m.

### **Reliable Power and Thermal Management in the Data Center**

There is a considerable gap between the power and cooling capabilities of data centers, and what high computer density systems such as blades and IU require. Lack of power manageability in data centers also makes it difficult to address power and thermal issues in a graceful manner. This presentation describes how these issues are addressed with advanced technologies.

**Deva Bodas**  
Senior Architect  
Intel Corporation

**David Filani**  
Senior Architect  
Intel Corporation

2:15 p.m.

### **Make Your Own Sundae Break**

2:45 p.m.

### **A. Avoiding Water Issues While Cooling Mission-Critical Equipment**

When it comes to minimizing business interruptions, few companies give much thought to water as a culprit. In reality, according to one study, water damage ranked second behind power outages as the leading cause of business outage, accounting for 27% of the causes. In addition, with the rise in power density and the subsequent increase in heat, fluid-based cooling technology are becoming more prevalent and increasing the dangers associated with water and fluid-based damage. While leak detection technologies have been around for years, new innovations such as the use of nonconductive polymer cables provide significant advantages and tremendous cost benefits, thus allowing more mainstream adoption -- especially among mission-critical facilities with sensitive electronic equipment. We will examine the various emerging technologies in water leak detection and highlight the minimal requirements one should consider in evaluating these solutions for increased uptime.

**Cam Rogers**  
Sales Channel & Business Development Manager  
RLE Technologies

### **B. Reliability Data, Metrics and Architectures for Mission Critical Systems**

This session will focus on the basics of reliability prediction and improvement for mission critical systems. After a brief tutorial on the definitions of probability, anticipated failure rate will be used to calculate the probability of mission success for a system. These results are connected to familiar metrics, and the metrics will be tested against real-world data and customer expectations. Common redundant system architectures will be examined as avenues to improve the probability of mission success.

**Dr. James M. Galm**  
Vice President & Chief Technical Officer  
LayerZero Power



3:30 p.m.

### **Northeast Power Grid Outage**

This presentation will discuss both normal operation of the high-voltage transmission system and the challenges facing it as well as the detailed cause(s) of this particular outage. While it's too soon to be sure of the cause, one thing is nearly certain: these problems have been developing for decades, and will probably take decades to repair. Managers of critical facilities already know the two-word solution: protect yourself. This session will also explore how the blackout and other factors may be changing the frequency and duration of outages, and explore some possible actions to cope with the constantly changing threat of downtime.

**Stephen A. Fairfax**  
President  
MTechnology, Inc.

4:15 p.m.

### **Concurrent Tours**

Tours in the San Antonio area are still being finalized. Registered attendees will be notified via e-mail with tour details at which time selections need to be made. Based on prior conference evaluations, 7x24 Exchange is making every attempt to find noteworthy facilities as close to the resort as possible. Tour attendees will return to the resort at a reasonable hour to attend the hospitality suites and enjoy the property. All tours are subject to space availability and will be assigned on a first come, first served basis.

6:00 p.m. – 10:00 p.m.

### **Hospitality Suites**

## **TUESDAY, NOVEMBER 18**

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7:00 a.m.

### **Continental Breakfast**

8:30 a.m.

### **Opening Remarks Day 2**

Bob Cassilano will review day one highlights; provide an overview of upcoming events and address housekeeping items of interest.

9:00 a.m.

### **Keynote Address: New Technologies, New Threats**

Voice Over IP (VoIP), wireless LANs, and other emerging communications technologies bring with them a new set of security challenges and issues. Kevin Kealy will discuss these technologies, the new security issues they bring, and best practices for closing these new security loopholes. He will also discuss the latest Internet security threats such as the Blaster worm, how hackers are exploiting new avenues to attack your systems, and what you can do about it.

**Kevin Kealy**  
Security Architect  
AT&T Laboratories

10:00 a.m.

### **Refreshment Break**

10:30 a.m.

### **Nuclear Power Experience Relevant to the 7x24 Industry**

Nuclear power operations demand very high reliability for both production and safety. The extraordinary demands placed upon people and machines require systematic analysis and control of work processes, human actions and equipment maintenance. Protecting against vulnerabilities arising from external events and common cause failures is especially important. Useful industry-wide practices include information sharing, use and enforcement of common performance standards and mutual assistance where feasible. The experience of nuclear power has shown that high performance is possible, but demanding energy, vigilance and intolerance of failure.

**Mike Goley, Ph.D.**  
Professor of Nuclear Engineering  
MIT Nuclear Engineering Department

11:15 a.m.

### **High-Resistance Grounding in Critical Power Systems**

High-resistance grounding adds significant reliability to electrical power systems and should be considered for any new critical facility. This presentation explains how HRG works and the advantages it brings. The discussion will also include the National Electrical Codes involved and the ways HRG may be applied to various electrical equipment in high-reliability systems.

**Michael J. Mosman, P.E.**  
**Vice President**  
**CCG Facilities Integration**

12:00 p.m.

**Lunch**

1:30 p.m.

### **Application of Nuclear Operational Philosophies to Facilities Operations at Data Centers**

This session will focus on those risk mitigation philosophies used by nuclear facilities that have been successfully applied in data center environments. Discussion will include several examples, results, and the processes for implementation within the facilities organizations.

**Terry R. Vergon**  
**Facilities Manager, Microsoft Support Services**  
**Cable and Wireless America**

2:15 p.m.

**Refreshment Break**

2:45 p.m.

### **A. Negligent Failure to Plan for Business Continuity**

Business continuity planning and crisis management may no longer be a matter of good business practice. In fact, enterprise business continuity planning may be ripe for regulation, as the reliability of today's mission critical business processes is being questioned. Is your enterprise prepared to respond with the proper actions to safeguard your people, your business partners, and your assets?

**Michael A. Segura**  
**Product Marketing Director**  
**Intervice Incorporated**

### **B. Case Studies:**

#### **Commission Now or Commission Later**

Earl Strickland of Bank of America will present the first of two case study projects completed within the last year. Earl will outline the successful commissioning of the newly constructed 2N redundant, 20,000 square foot Data Center supporting Bank of America's Trading Floor in the Hearst Tower in Charlotte, NC. Commissioning was performed during the tenant construction phase in the mostly occupied high rise. Numerous problems were found and corrected prior to live Data or Trading operations. Michael Fluegeman of the Syska Hennessy Group will follow with details on both projects. The second project was an emergency troubleshooting and "after-the-fact" re-commissioning effort for a redundant 12,000 square foot, 4 year old Financial Data Center in the Midwest. This commissioning also ended up successful but was less comprehensive, more disruptive, risky and costly. After nearly catastrophic UPS failures, numerous and significant problems were found, corrected and tested. All of the problems in the second case study likely would have surfaced had methodical and thorough factory and field performance testing been performed during the construction phase, as in the first case study.

**B. Earl Strickland**  
**Sr. Vice President for Critical Facilities Engineering**  
**Strategic Operations at Bank of America**

**Michael Fluegeman, P.E.**  
**Associate Partner**  
**Syska Hennessy Group**

3:45 p.m.

#### **Pass the Mike Session**

This session will address questions previously submitted on registration forms and those which surfaced during the conference. 7x24 Exchange encourages all attendees to step up to the microphone and state and their case. Attendee participation and open dialogue has made this a valuable session over the years.

6:00 p.m.

#### **Vendor Sponsored Event**

Join us for another spectacular, fun-filled vendor sponsored evening. Further details regarding this event will be e-mailed to registered attendees prior to the conference.

## **WEDNESDAY, NOVEMBER 19**

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7:30 a.m.

### **Continental Breakfast**

8:30 a.m.

### **Opening Remarks - Day 3**

Bob Cassiliano will review highlights from days one and two and provide an update on current 7x24 Exchange activities and plans.

9:00 a.m.

### **Re-writing the Book on Raised Floor Cooling Requirements**

All power supplied to a computer room converts to heat and must be cooled. Hardware manufactures such as IBM, Hewlett Packard and Sun Microsystems concur that cooling is the #1 design problem facing the Telecommunications and Information Technology industry. Jack Dale Associates has tested and evaluated over 3-million square feet of raised floors since 1991. Their research and fluid dynamic models have recently been published in an international engineering journal (ASHRAE March, '03). The conclusions are irrefutable; air distribution and cooling designs are outdated. Legacy infrastructure poses immediate risks to air-cooled electronic equipment. This presentation will provide insight into fluid dynamic processes and incongruent design practices affecting the majority of existing data centers. Practical suggestions, as well as an explanation of the theory behind the research, will be provided.

**Edward C. Koplin, P.E., CEM**  
**President**

**Jack Dale Associates, PC**

10:00 a.m.

### **Refreshment Break**

10:30 a.m.

### **Delivering Reliable Telecommunications Services to Dynamic Cities**

Smaller metropolitan and rural areas require the same level of reliable, leading-edge telecommunications services that more populous areas do if they are to compete economically and serve their knowledge workers. However, these smaller areas do not always have access to all of the necessary telecom services that larger population centers do. Consequently, many such areas are building their own metropolitan or regional telecommunications networks to serve their local needs. This talk will discuss the mission critical decisions that need to be made regarding topology, data security, and power to optimize telecommunication service reliability when designing and building a reliable wholesale services network. Jeff will also discuss the operational processes that are critical to maintain the designed service reliability.

**Jeff Fishburn**  
**Chief Technical Officer**  
**DynamicCity**

11:30 a.m.

### **Physical Security Challenges and Solutions for Data Centers**

Data centers must ensure their IT/computer security is working properly, but what about the physical security of their surroundings? While every business should have a physical security plan in place due to a variety of world-wide concerns, data centers often have unique threats because they house valuable and private information. In this presentation, the speakers will use specific examples to demonstrate a range of solutions such as implementing and enforcing security policies, upgrading technology for entrances and exits, and new high-tech alternatives like biometrics.

**William Ryman**  
**Principal**  
**EDI Limited**

12:15 p.m.

### **Closing Remarks and Raffle**

12:30 p.m.

### **Conference Adjourns**



## **TWO QUICK STEPS TO REGISTRATION:**

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### **1. Conference Registration**

Complete a Conference Registration Form for each participant, on-line or mail or fax a copy of the Conference Registration Form on page 9 to:

**7x24 Exchange**

322 Eighth Avenue, Suite 1400  
New York, NY 10001

**Phone:** 646-486-3818

**Fax:** 212-645-1147

[www.7x24exchange.org](http://www.7x24exchange.org)

To ensure space availability, registrations must be received by November 5th.

### **2. Hotel Reservations**

To take advantage of *7x24 Exchange's* special rates at the Westin La Cantera Resort, call the resort directly at 210-558-6500 or Westin Central Reservations at 800-228-3000. The room rate is \$185.00 for single and double occupancy. Additional adults in rooms are \$25.00 per day. Conference rates are available from Friday, November 14th through Thursday, November 20th. A \$10.00 resort fee will apply to all guest rooms. The resort fee includes local phone calls, access charges for credit card calls, Starbucks's coffee daily in the room, USA Today delivered daily, use of the Health Club and shuttle service within the Resort to the golf course.

To ensure space availability, reservations must be received by October 15th. After October 15th rooms are subject to space availability.

### **Special Interest Groups (SIGs) and Chapters**

To better serve users and provide a means for ongoing technical interchange between semi-annual conferences, *7x24 Exchange* encourages and supports the formation of local *7x24 Exchange* Chapters and Special Interest Groups (SIGs). Monthly or bi-monthly chapter meetings help assure continued dialogue between members in a given geographic area. SIG's provide an opportunity for members to explore specific *7x24* issues/problems in depth.

*7x24 Exchange's* Board of Directors will authorize Chapters and SIGs based on availability of a president/chairperson, a clear program plan and, if needed, a budget. Chairpersons are responsible for gathering a working group and achieving approved plan objectives.

Any member interested in forming a Chapter or SIG should contact *7x24 Exchange* headquarters at (646) 486-3818.





## **WHAT MEMBERS ARE SAYING**

*"Exceptional!"*

*"Overall this was a top notch conference. I wouldn't change a thing"*

*"Always first rate and always great venue"*

*"Invaluable input from all sectors with a good mix of presentation topics"*

*"One of the best 7x24 Exchange conferences yet"*

## **VENDOR/CONSULTANT POLICIES & PROCEDURES**

### **INFORMATION TABLES AND POP-UP DISPLAYS**

Vendors and consultants are encouraged to participate in *7x24 Exchange*. However, the group is primarily driven by user interest. Tables are provided at the conference for the distribution of product literature, educational material and other useful information at no cost. Overt selling at *7x24 Exchange* meetings and the use of *7x24 Exchange* membership lists for direct selling are prohibited.

Conference sponsors will be permitted to occupy one full six foot table for literature and/or a pop up display at no cost. Non sponsoring companies can set up pop up displays at a cost of \$500 per table for members and \$750 per table for non-members. Any additional costs such as electric, shipping etc. are the responsibility of the vendor.

*7x24 Exchange* and the Westin La Cantera Resort are not responsible for the theft, loss or any damage incurred to any vendor materials. If you wish to coordinate a display please contact Tina DiMichele at 646-486-3818 x100. All displays MUST be registered with *7x24 Exchange* by November 5th.

### **HOSPITALITY SUITES**

Hospitality suites/demo rooms are permitted on Monday, November 17, 2003 between the hours of 6PM and 11PM. All hospitality suite hosts must be a Key member of the *7x24 Exchange* Corporate Leadership Program (CLP). In order to be recognized by *7x24 Exchange* vendors must complete a Suite Registration Form.

As always, hosting a hospitality suite gives vendors, direct access to the conference attendees and provides the opportunity to promote products and services in an enjoyable relaxed environment.

If you are interested in hosting a suite on Monday, November 17th, please contact Brandon Dolci at 646-486-3818 x 108 before October 16th.

**2003 Fall Conference Corporate  
Leadership Program Members** (at press time)

**Silver Members**

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Legendary Reliability™

*Russelectric*  
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Tara Oehlmann, Ed.M.  
(646) 486-3818 x104

**Conferences**

Brandon A. Dolci  
(646) 486-3818 x108

Register online today @ [www.7x24exchange.org](http://www.7x24exchange.org)

Questions? Call 646-486-3818 x100 or e-mail [info@7x24exchange.org](mailto:info@7x24exchange.org)

**7x24  
Exchange**

**7x24 Exchange**

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New York, NY 10001

[www.7x24exchange.org](http://www.7x24exchange.org)

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