

uptime

for maintenance reliability and asset management professionals

dec/jan 16

The Pursuit of
**Continuous
Improvement**
in Asset Management



The **RELIABILITY** Conference — Las Vegas —

The RELIABILITY Conference is designed for those who lead, manage and contribute to a reliability and asset management program. Reliability leaders, asset managers, maintenance managers and asset condition management experts will deliver information you can put to use immediately.

Topics Include

- Reliability Centered Maintenance
- Predictive Maintenance
- Work Execution Management
- Asset Condition Management
- Reliability Engineering for Maintenance
- Defect Elimination
- Lubrication
- Key Performance Indicators
- ISO55000 Asset Management
- Computerized Maintenance Management Systems
- Maintenance Planning & Scheduling
- Managing Maintenance
- MRO Spare Parts Management
- Failure Mode and Effect Analysis
- Root Cause Analysis
- Leadership

Machines talk, we listen.



An Interview with Saar Yoskovitz Co-Founder and CEO of Augury Systems

Mr. Yoskovitz, an avid entrepreneur, has extensive experience in Machine Learning, Signal Processing Algorithms, and System Architecture. Prior to founding Augury Systems, Saar worked as an Analog Architect at Intel. Saar holds a B.Sc. in Electrical Engineering and a B.Sc. in Physics from the Israel Institute of Technology (Technion). During his studies, Saar initiated a voluntary project called "Select - Students for Technological Advancement," for which he received the Israel's Council of Higher Education (MALAG) award for social involvement.

Augury Systems brings Internet-age technologies into the maintenance world and combines them with the gold-standard practices of Predictive Maintenance. Ideal for use in factories, commercial buildings and even homes, Augury's platform enables facility owners and service companies to deploy quick, cost-efficient and scalable predictive maintenance strategies that reduce environmental impact, energy usage and operational costs. Augury teamed up certified Vibration Analysis experts with Machine Learning algorithm experts - in order to build the mechanical diagnostics platform of the Internet of Things.

Uptime: Many people talk about the Internet of Things (IoT). What is your vision for it and where do you see it going?

Saar: IoT is overhyped. It is just a "new" Internet with new things attached. It is really an issue of consumer focus versus manufacturing focus. When we use the term "manufacturing," we are really looking at the human to machine interface (HMI) and data systems that already exist in many plants today. If you can break the data down to the component level and detect a machine's conditions, then you are able to make changes based on the data.

There is a tremendous amount of data existing in plants today that is not being mined. This data has not been made available for analysis decision-making. The real issue is how to connect to the machines and their sensors and know what to do based on what knowledge can be gleaned from the data. For example, consider that almost everyone that works in a plant today has a typical smartphone. We want to make it possible for them to connect their phones to the sensors and bring asset condition management (ACM) data into the hands of the technicians.

Consider a used car. The onboard computer says we have a problem. We take the car to a repair center and plug it in; we then would know what to do based on the advanced diagnostics. We are simply taking this concept to the industrial environment.

Imagine what the IoT allows us to create. Another example is the jet engines on aircraft today. The engines are serviced based on flight hours and the real-time condition of the engine. This is enabled by continuous monitoring. When an airline receives the alarm, "aircraft on ground," it's already too late.

There have been many interesting developments in the maintenance reliability industry recently. Based on the rate at which companies are increasing automation in their plants, the number of devices with Internet Protocol (IP) addresses in their plants are also increasing. Uptime recently caught up with Saar Yoskovitz, CEO and co-founder of Augury, (www.augury.com) who has an interesting approach to capitalizing on these devices.

The airlines provide continuous engine monitoring during normal flight operations. The engine data of the aircraft in the fleet is constantly transmitted to the airline's repair center. If there is any sign of irregularity, immediate action can be taken before any serious damage occurs.

On average, each aircraft that is linked to a system transmits a comprehensive batch of data to the ground every three to four hours. Also, if pilots notice anything out of the ordinary, they press a button that sends data to the repair center for examination. From the ground, the experts at the repair center are also able to call up data from aircraft in flight.

This same concept is being brought into industry.

Uptime: How would this work?

Saar: Since sensors already exist or can easily be installed on most plant equipment, they can be utilized for this purpose. Off-the-shelf sensors, whether vibration, ultrasound, etc., can be supported. The data collected from these sensors is then sent to a server in the Cloud. There, the machine specific data is analyzed to look for any developing problems. The data from the equipment also can be taken and compared to other similar machines around the world, again looking for any anomalies that indicate the start of a developing problem.

We are able to use information from a growing database to compare the equipment's current performance to what it was designed to be. We start out at a high level, such as the size of a pump, manufacturer, model, etc. Then, we can quickly drill down to more granular data specific to that piece of equipment.

Uptime: This is very interesting; has it been actually utilized by any plants?

Saar: We currently have two of the largest facilities contractors that are using our product, helping us build the machine specific data even faster.

Uptime: What are some other uses for this type of product or service?

Saar: The product can be used with operator or maintenance inspection rounds. While some organizations use outside contractors to collect and analyze this type of data, eventually companies will be able to bring this type of work back in-house due to its simplicity. It really will help companies with a shortage of skilled personnel within their current in-house maintenance and operational staff since they will not need the higher level technical skills required to perform this type of analysis. When companies are faced with a skills shortage due to retirements, they can leverage this technology to help them lessen the impact of the loss of these skills.

Uptime: Where do you see the application of this type of service?

Saar: Initially, we have started with commercial buildings, such as data centers, government buildings, universities and hospitals. It is a good place to

start since 88 percent of commercial facilities don't use ACM. However, as the number of devices connected to the Internet continues to grow, we expect to see this type of service grow to include utilities, especially turbine related equipment, and typical manufacturing plants.

Uptime: How does a client invest in this service?

Saar: We will offer a pay-as-you-go service. The amount of investment will be based on the number of equipment items included in the program. This allows clients the flexibility to start small, generate some benefits and then grow their programs.

Uptime: What about the data? What happens to it?

Saar: When clients have their data stored in the Cloud, they always have access to it. They don't lose it when someone leaves or if they decide to change ACM vendors.

We have standard algorithms that help analyze the stored data. We also use military grade hardware to ensure it will stand up to almost any industrial environment. We have developed this system in-house using a very high level of subject matter experts (SMEs). Computerizing this data with our SMEs allows our clients to reduce the necessity to have their own human expert.



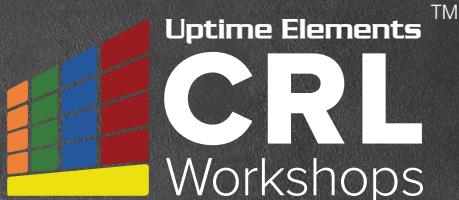
Uptime: How does the service work? How does the client gather the data and get the results?

Saar: Our device has a five second read time. This is important since it allows them to rapidly gather the data. It is put up in the Cloud, which allows us to quickly know what the problem is and determine what to do to solve it. We provide alerts for at least four levels: acceptable, alert, alarm and danger. As a measured condition moves from acceptable to one of the other levels, the monitoring frequencies are increased, tracking it until it gets bad enough to require correction.

Uptime: It sounds like if this technology is not adopted soon, the industrial side of things will be left behind in the IoT. What do you envision for the future?

Saar: Imagine for a moment the possibility of everyone being a vibration analyst. What would happen to reliability centered maintenance (RCM) if it was relatively economical to do? Would it change how we apply some of these existing tools that we already have today? Would it change how we view reliability? How could continuous monitoring make a difference? These are questions that will only be answered as we continue to move into the future of the IoT.

Uptime: We are looking forward to see how Augury makes inroads with this very interesting product and service.



Create
LEADERS
in Your
Organization

Reliability Leadership Institute | Fort Myers, Florida

Certified Reliability Leader Workshops

The industry's most advanced thinking in reliability

90%
PASS RATE
ON THE
CRL EXAM
AFTER TAKING
THIS COURSE

Included in your registration

4-Day Workshop Pass

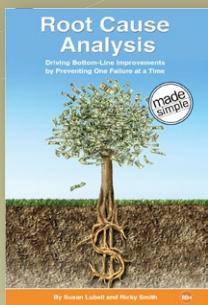
Uptime Elements Passport Series plus Travel Guide -
\$150 value

30 - day free trial to the Uptime Elements Academy Learning Management System - \$299 value

CRL Exam - \$299 value

New Releases!

2 New Additions to the Made Simple Series

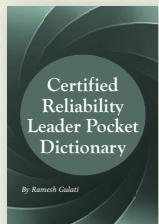


RCA Made Simple
by Susan Lubell
and Ricky Smith

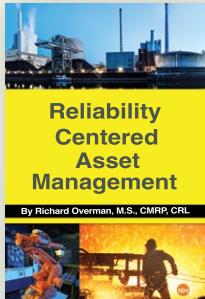
\$19.99
each



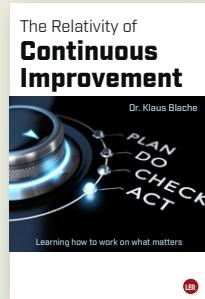
**Failure Analysis
Made Simple**
by Neville Sachs



**Certified Reliability
Leader Pocket Dictionary**
by Ramesh Gulati



**Reliability Centered
Asset Management**
by Richard Overman

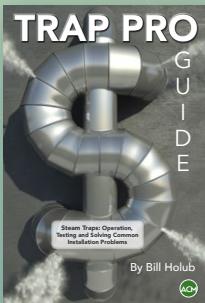


**The Relativity of
Continuous Improvement**
by Dr. Klaus Blache

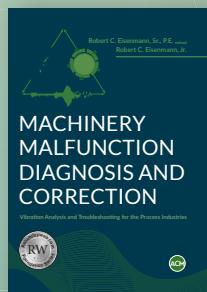


**The Visual
Management Handbook**
by Mary Jo Cherney
and Robert Dapere

BRAND NEW to the Reliabilityweb Library!



Trap Pro Guide
by Bill Holub



**Machinery Malfunction
Diagnosis and Correction**
by Robert Elsenmann, Sr.
and Robert Elsenmann, Jr.