

Newsletter Editor: Jay Patel

Chair's Message

Welcome ECD members!

Autumn is here and soon we will be enjoying our accomplishments over the years.

The ECD Executive Board is a winning team made up of hard-working and dedicated professionals just like you. It is a team of volunteers that made our division the best!

Several members of our board have taken responsibilities in multiple committees in order to continue providing our membership the service they need over the years.

In order to assure continuity of success in the future, our Division Executive Board is seeking a few "new players" to add value to our winning team. At this time, I would like to extend an invitation to join our team as part of the Division Executive Board and make our ECD Division the best in all of ASQ.

There are numerous committee positions available which will allow you to participate at your own pace and there will always be ECD Executive Board members available to provide guidance or help.

If you need further information about volunteering as part of the executive board, please email Marion Bize who is the 2018 Nomination Chair. Her email address is mbize.tl9k@gmail.com.

Hope to hear from all of you!

Lucita Kahn
ECD Chair 2017-2018
lkahn3@verizon.net

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ECD Best Paper Award to be presented at WCQI

ECD's Best Paper Award will be presented to Dr. Madhav Phadke at the ECD Council Meeting at WCQI in May 2019 in Fort Worth.

Dr. Phadke's award winning paper, *Optimizing Accuracy and Reliability of Medical Diagnostic Device*, was presented at RAMS 2018 in Reno, Nevada in January 2018.

Dr. Phadke is an engineer and statistician and is the founder and president of Phadke Associates, Inc., a leading software and services company for design and test optimization, and systems engineering process improvement. Phadke Associates develops and markets the rdExpert™ family of software tools for optimizing product designs for reliability and cost, optimizing test plans, and evaluating effectiveness of test and test plans. Dr. Phadke is an ASQ Fellow and a recipient of the 2011 IEEE Region 1 Innovation Award. He is the author of the first engineering textbook on Robust Design Methods in the US, titled *Quality Engineering Using Robust Design*. Dr. Phadke received his PhD in Mechanical Engineering and MS in Statistics from the University of Wisconsin, Madison, his MS in Mechanical and Aerospace Sciences from the University of Rochester, and his BTech in Mechanical Engineering from the Indian Institute of Technology – Bombay. Dr. Phadke is a long-term member of ASQ ECD.

ECD's Best Paper Award is presented to the author of the best paper by an ECD member presented at either WCQI or the following RAMS. The award includes a plaque and an honorarium. RAMS grants a free registration to the winner the year the award is presented.

Congratulations to Madhav!

Respectfully submitted by:

Charlie Plotkin and the ECD Council Member Leaders

2018 ECD Scholarship

The Electronics & Communications Division Scholarship Committee is pleased to announce that it awarded \$2,500 in scholarships to two deserving recipients.

Natalie Keohane - \$1,500



Natalie Keohane is a senior at McIntosh High School in Peachtree City, Georgia. She plans on pursuing a career in pharmaceutical sciences with a goal of achieving a Doctor of Pharmacy degree at either the University of Georgia, Georgia Institute of Technology, or Northeastern University. She plans to participate in undergraduate research and study abroad programs. Throughout high school, she was a member of the varsity soccer team; in 2018, her team won the Georgia 5A State Championship! Keohane has been a member of her high school's Beta Club, the Health Occupations Student of America club and the National Honor Society. She has volunteered at Winshape Day Camps and loves working with

kids from her community.

Hannah Ayer - \$1,000

Hannah Ayer is from Pickerington, OH and is currently a freshman at Kent State University majoring in Psychology. Hannah is involved with the Education, Health, and Human Services Living Learning Community at her school. She is also a member of CHAARG, a workout organization for girls that promotes fitness and health. Prior to college, she was active with both concert and marching bands, and was a solo and ensemble performer on both flute and piccolo. Ayer also was on the cross country team, a member of the Butterfly Club, and was a student representative on the Girls Up Club. She is very active with her church, where she has served as a volunteer for Vacation Bible School, Work Camp, and the Buddy Ministry.



The Electronics and Communications Division's Scholarship Committee and its Management Committee wishes the scholarship recipients the very best during their academic career and congratulates them on this noteworthy accomplishment.

Additional information about the Electronics and Communications Division and its scholarship is available at <http://asq.org/ec/member-services/ec-award.html>

Sandford “Sandy” Liebesman Scholarship Application Available



Sandford “Sandy” Liebesman

Applications are now available for the Electronics & Communication Division’s Sandy Liebesman scholarship! This \$2,500 scholarship fund was created to help members, their family, or friends defray the costs associated with college expenses. Scholarship funds will be dispersed to one or more deserving students in the Spring of 2019.

Applications can be downloaded from the ASQ Electronics & Communication Division web site: <http://asq.org/ec/member-services/ec-award.html>

Applications can also be obtained by contacting Jim Spichiger at 740-349-3708 or jim.spichiger@hotmail.com.

Applications must be postmarked no later than February 15, 2019.

Process Approach to Auditing

by Rupal Patel

Using the process approach to auditing is all about looking at every process: the inputs, outputs, records, metrics, risk, and the authority and responsibility of the process owner.

Inputs; are the inputs to the process identified as requirements to the process. Are these inputs adequate according to the requirements? Are there any special requirements such as certificates or testing results? Any special handling of the inputs?

Outputs; what are the identified outputs expected from this process? How are they measured? What records are required by the standard or the customer? Are those records complete? How are they stored? Where are they kept?

Metrics; how is this process measured? What are the goals and objectives? If the objectives are not being met, are there corrective actions in place? Are these metrics reported or rolled up for the management reviews?

Risk; is the risk of the process evaluated and analyzed? Who is responsible? How is risk determined? Is there action if the risk exceeds expectations?

Authority and responsibility; Defined in the process documents? Process owner responsibilities defined? Reporting responsibilities and corrective action responsibility?

This is called the process approach to auditing, not just auditing procedures. But is the process functioning as a process? For years, we just audited procedures; are people doing what the procedure says they do?

Start with the inputs to the process. What is required based on the process, customer requirements, regulatory, compliance, status? What has the process defined as required inputs? Are they acceptable according to the specified details of the process documents? Within the process itself, what are the requirements and are people following those specified in the documents? Are there adequate work instructions? Are there proper revisions? Are people aware of these documents and are they actually being used?

Then, move to the outputs of the process. Are the outputs defined in the documents and what are the requirements for those outputs? There are two possible outputs, acceptable or not acceptable; how is this determined? Inspection or test or some other method? Are the results recorded? How are acceptable outputs identified? How are not acceptable outputs identified? How is the process monitored and measured?

Has there been any risk analysis of the process? PFMEA? How does the process owner determine the risk of unintended outcomes and is there anything in place to handle or address the risk? Is monitoring used for tracking and reporting to the management reviews?

Process documentation; if documentation is required, is it the latest revision? Do people in the process have access or know where to get the documents? Are people aware of the policy and objectives? Investigate any training requirements and records, training matrix or other method of record keeping. Investigate nonconformities from the process and labeling and storage according to the nonconforming process. Investigate how changes to the process are handled, evaluated, and documented.

Process auditing using a Turtle Diagram:

Process auditing is more realistic and focuses on the process, and not just the documentation. Using the Turtle diagram is part of using the process approach to auditing. Let's look at the required inputs. What is needed for you to perform this task?

Process name and process owner; what is the process and who is responsible?

Inputs; what are the required inputs for this process? Materials, drawing, specifications approved requests, shop order?

Output; what is the end result of this process? Completed product, service, operation, traveler, inspection or test results?

What; what is required to complete the output? Machines, computers, instruments, and test equipment? How are they certified, calibrated, or maintained?

Who; what training is required for this process? Certifications? Qualifications?

How; what documents are needed for this process? Procedures, work instructions, and specifications?

Measure; what are the metrics, measurements, objectives, and goals for this process?

As you audit, you fill in the requirements and findings, then you can use this one page for each process to create an audit report. Another aspect is once the boxes are created for the process, you can save it for the next audit and everything is already filled in; then just add any issues you find. So, for internal auditors, you just print the filled-in turtle diagram and go do the audit.

For example, if you were to audit purchasing, the input would be whatever purchasing uses as a trigger to start the purchasing process, such as an approved request. Who approved it? Do they have the authority? Is the approval tied to a limit and was that limit within their authority? Question: how do you know the approval is proper? Another input might be a BOM from a system; how do you determine if the BOM is the latest revision? Do you get it? How?

An output might be an approved Purchase Order; who approves? Audit 10-15 POs to see if they are signed properly according to the procedure.

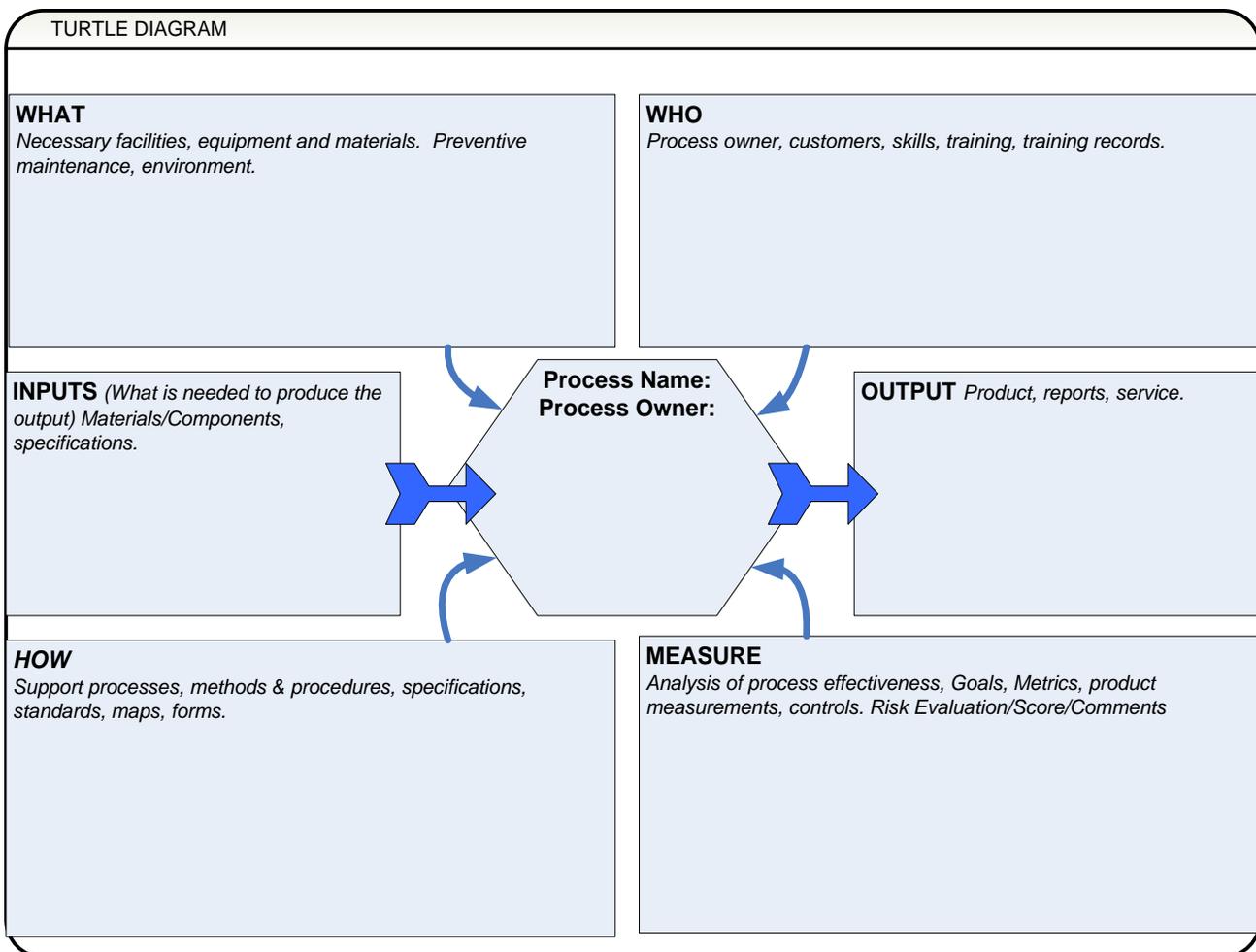
A measurement might be for purchasing on-time delivery and quality. How do you measure, who measures, how is this reported, and how are suppliers tracked?

Most of the information needed will be in the procedure, so you should be able to fill it out by just looking at the procedures. The answers and the real information will be discovered during the audit and might turn into a finding.

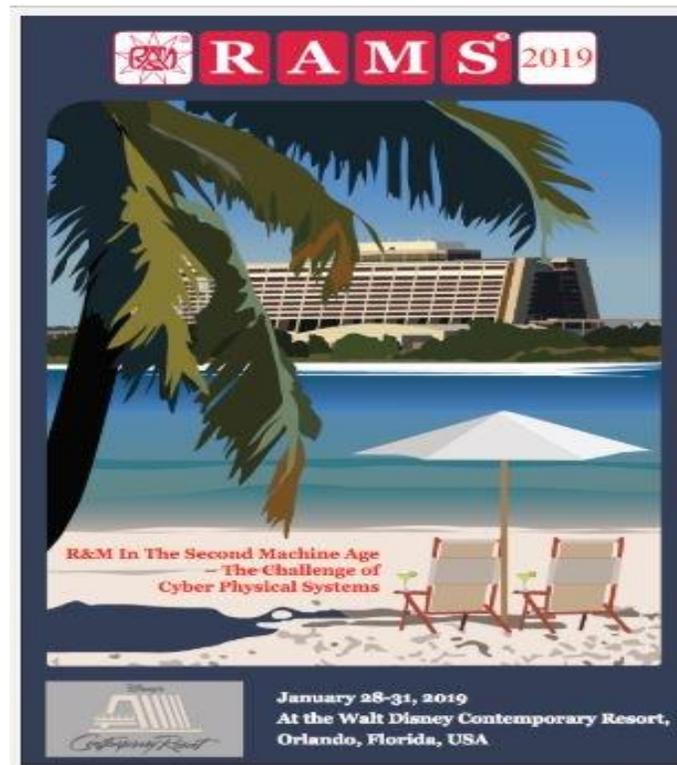
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RAMS 2019 at Walt Disney World Resort



The Annual Reliability and Maintainability Symposium, sponsored by ECD and eight other professional societies, will be held January 28-31, 2019 at Disney's Contemporary Resort in Lake Buena Vista, Florida (Orlando area).

As a former ECD chair, I'm honored to be General Chair for the 2019 Symposium and would be delighted to see high attendance by ECD members. As an ECD member, you will receive a \$200 discount off the registration fee. (There is additional saving with early rates available through December 23).

RAMS is an extremely effective and cost-efficient way to educate yourself and your associates in reliability, maintainability, and product integrity. We are especially excited about the location of RAMS 2019 – at Walt Disney World® Resort, Disney's Contemporary Resort. This iconic location has a world-class convention center that will enhance the experience of the symposium, and the location within Walt Disney World® Resort speaks for itself. After attending symposium sessions, one can hop on the Monorail to the Magic Kingdom® Park, or continue on using WDW transportation to visit any of the other theme parks and attractions.

Special hotel rates for RAMS attendees make this an especially terrific year to attend. **There is a low rate of \$199/night plus tax on a space available basis to registered RAMS attendees. This is more than 50% off this Disney Deluxe Resort Hotel!**

Visit <http://rams.org/> to learn more about RAMS 2019's Theme and Program, and to register. Registration for the Symposium and for the hotel is open now!

Charles W. Plotkin
RAMS 2019 General Chair

generalchair@rams.org

Meet our ECD Leadership:

Immediate Past Chair: Marion Bize, mbize.tl9k@gmail.com

Chair: Lucy Kahn, lkahn3@verizon.net

Chair Elect: Melvin Downes, mcscam@optonline.net

Treasurer: Marc Kelemen, nanomarc@wowway.com

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