

DfR Solutions March/April 2011 Newsletter

[Walt Tomczykowski Joins DfR](#) | [DfR in Bay Area](#)

Sincerest Condolences to Japan and New Zealand

DfR Solutions wishes to convey our deepest sympathies to our friends and colleagues in Japan and New Zealand. We hope and pray that they and their families are safe. We have complete faith that both nations will use their skills and resilience to rise above this series of tragic events. [How to help.](#)

Design it Better, Launch it Faster, and Satisfy your Customers
After years of development and success among early adopters, DfR Solutions is launching version 2.0 of our [revolutionary electronic design analysis software](#). This unrivaled product provides the most comprehensive solution available for [Physics of Failure \(PoF\) based analysis](#) of electronic designs. The software's intuitive commands and ease of use invites usage among a broad range of engineers and managers, where rapid results provide almost immediate feedback on product designs and their performance in the hands of the customer.

To learn more about a tool that will change the way you design, please join us for our introductory webinar on March 31, 2011. [Registration](#) is now open. For more information, please contact [Ed Dodd](#).

This is Not a Test

How can you keep reliability issues off of your to-do list? Change your process. There is typically too much testing of products after build. Reliability improvement and growth tests (test, analyze, and fix) concept have had limited success, but added significant cost and time. The new paradigm must be to shift the focus during engineering and manufacturing development (E&MD) from ['pass test' to 'good design'](#) prior to completion of technology development. For more information, please contact [Walt Tomczykowski](#).

How to Design for Thermal Cycling (IMAPS)

[Nathan Blattau](#) will be presenting a broad-based webinar on the challenges of designing for an environment with temperature cycling. Whether your product is military, industrial, or part of the new ['Free Air Cooling'](#) trend, this insightful presentation will identify the mechanisms affiliated with thermal cycling and how to predict performance during product design. To register, please contact [Brian Schieman](#). For more information, contact [Nathan Blattau](#).

The US is Going Green

The greening of the electronics marketplace continues. This time, however, it's the US Government. A joint [EPA](#), [GSA](#), and Council on Environmental Quality (CEQ) [taskforce](#) is [determining](#) how government can help advance efforts to green the design, manufacture, procurement, and use of electronics. Want a vote? Send this [survey](#) in ASAP. For more information on staying ahead of environmental legislation, please contact [Randy Schueller](#).

Reballing Ball Grid Arrays (BGAs)

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[The Heat is On : Performance and Cost Improvements through Thermal Management Design](#)

March 21, 2011, San Jose, CA

The electronics industry's top three buzz words - integration, miniaturization and functionality - are also the top three challenges for thermal management professionals. Attendees to this symposium will learn to identify potential problems with thermal management design, effectively heading off any issues before they arise.

With electronics components decisively shifted to Pb-free, it is becoming difficult to buy components with tin-lead (SnPb) solder balls. The only three responses? Custom order (only if you want >1 million), adapt (seen any Pb-free planes?) or post process (reball). [This paper](#) presents the results from a comprehensive study on the ability of reballed BGAs to survive severe environments. Please contact [Joelle Arnold](#) for more information.

RCA your HALT

[Highly accelerated life testing \(HALT\)](#) can be a useful activity, especially in that period between design and pilot production. However, the true value of HALT is only AFTER the failures during testing are [effectively root-caused](#) and decisions on corrective action implemented. And who is the only company that can perform HALT and RCA in same place? DfR Solutions! For more information, please contact [Cheryl Tulkoff](#).

Toughest Test Program...EVER

Copper, Copper, Everywhere

The [copper revolution](#) has reached component packaging (just in time for 3D integration!). [Copper wirebonds](#) and [copper pillars](#) are proliferating like wildfire throughout multiple platforms. Copper is cheaper than gold, but has lower resistance. What's not to like? However, with every material change come potentially unknown risks. Copper wirebonds require special atmospheres, higher bonding forces, and changes in [bond pad dimensions](#). The need for palladium plating can also drive galvanic corrosion. [Copper pillars](#) can increase the risk of white bump, drive complete consumption of solder to intermetallic at elevated temperatures, and increase stress states during thermal cycling. For more information, contact [Craig Hillman](#).

DfR News

DfR Welcomes Walt Tomczykowski as Vice President

DfR Solutions is proud to announce the hiring of [Walt Tomczykowski](#) to help customers design-in reliability, solve their system reliability challenges, and plan ahead for life cycle management challenges. Walt Tomczykowski, ASQ CRE and CQE, Vice President at DfR Solutions, is an expert in systems life cycle engineering and management. Walt will provide OEMs, integrators, and end users insight and guidance into reliability assessment and risk mitigation for components, modules and systems. Mr. Tomczykowski has provided life cycle product support and reliability expertise in the aerospace, defense, and transportation industries. He excels in improving reliability in new designs, reducing life cycle cost, and extending the life of aging systems while minimizing the risk of obsolescence and counterfeit parts. Prior to joining DfR he was Director of the Life Cycle Management Department at ARINC, responsible for strategic planning, financial control, and operations. He started his reliability career at Raytheon performing vendor source inspections and failure analysis. Walt has a MS in Reliability Engineering from the University of Maryland.

Good News Travels Fast

Have you seen this [article](#) somewhere before?

Google Calendar

Look for DfR at upcoming events, conferences, webinars, and sales visits that may be in your area on our new link to Google Calendar. Hunt for us on the [web](#). For more information on a specific activity, please contact [June Caswell](#).

Upcoming Events

DfR Solutions in Dayton (**Dayton, OH: March 1-2**)

Craig Hillman visited companies in the Dayton, OH area and presented on a number of topics, including design for reliability, vibration robustness, and

capturing wearout behavior in integrated circuits. If you would like to arrange for Craig to visit your facility or make a presentation when DfR is back in the area, please contact [June Caswell](#).

DfR Solutions in Pennsylvania and New Jersey (NJ: March 2)

Nathan Blattau visited companies in Central New Jersey and Eastern Pennsylvania and discussed a range of issue, including software reliability, failure analysis of magnetic components, and telcom system availability. If you and your associates are interested in an onsite visit and/or presentation when DfR is back in New Jersey, please contact [June Caswell](#).

DfR Solutions in The Philippines (Manila, The Philippines: March 21-25)

Craig Hillman will be visiting companies in the Manila area in mid-March. If you and your associates are interested in an onsite visit and/or presentation, please contact [June Caswell](#).

MEPTEC's The Heat is On Symposium (San Jose, CA: March 21)

Gregg Kittlesen will be presenting "Reliability of Electronic Systems in Telecom Environments" at MEPTEC's "[The Heat is On](#)" Symposium. The Symposium is part of the [Electronic Thermal Week](#). For more information, please contact [Gregg Kittlesen](#).

DfR Solutions in San Jose (San Francisco, CA: March 21-24)

Gregg Kittlesen and Ed Dodd will be visiting companies in the San Francisco, California, area in mid-March to present on a number of topics, including design for reliability, component qualification, and root-cause analysis. If you and your associates are interested in an onsite visit and/or presentation, contact [June Caswell](#).

Missile Defense Agency PMAP Meeting (Huntsville, AL: March 22)

Greg Caswell will be making a presentation on "BGA Reballing from Pb-Free to Sn-Pb Metallurgy" at the MDA's Parts, Materials and Processes Mission Assurance Plan (PMAP) conference. If you and your associates are interested in an onsite visit and/or presentation while Greg is in the area, contact [June Caswell](#).

RMS Partnership Warfighter Readiness at Best Cost (Springfield, VA: March 31)

Craig Hillman will participate on a panel discussing "[Achieving Highly Reliable and Safe Systems at Best Cost](#)." [Click here](#) to register for the workshop. For more information on the course or workshop, please contact [Craig Hillman](#).

IPC APEX (Las Vegas, NV: April 12-15)

Several members of DfR staff will be teaching courses and making technical presentations at the [IPC APEX EXPO](#). Courses will be presented on "[The Transition to High Brightness Light Emitting Diodes](#)," by Greg Caswell and "[Design for Manufacturing](#)," by Cheryl Tulkoff. In addition, [Cheryl Tulkoff](#) will be presenting a technical paper on "Automated Design Analysis: Accurately Capturing Warranty and End-of-Life Risks Early in Product Development," and [Ed Wyrwas](#) will be presenting on "Accurate Quantitative Physics-of-Failure Approach to Integrated Circuit Reliability." DfR staff members will also be meeting with customers at the conference. To arrange a meeting, please contact [June Caswell](#).

Reliability and Safety Workshop (Greenwich, United Kingdom: April 14)

Craig Hillman will be making a presentation on "The Synergy between Reliability & Safety in Automotive Electronics" at the [Reliability & Safety Workshop](#) jointly organized by IEEE, Reliability Society UK&RI and the University of Greenwich. For more information on this please contact [Craig Hillman](#).

EuroSimE Conference (Linz, Austria: April 17)

Craig Hillman will be making a presentation entitled "Automated Design Analysis: Accurately Capturing Warranty and End-of-Life Risks Early in Product Development." at [EuroSimE 2011](#). For more information or to arrange a meeting with Craig please contact [Craig Hillman](#).

DfR Solutions in Europe (France, Finland, Sweden, England, Austria, Switzerland: April 11-18)

Responding to overwhelming demand, Craig Hillman will be visiting several companies in Europe to discuss a variety of topics, including QFNs, Pb-free, design for reliability, copper interconnects in component packaging, and wearout of integrated circuits. If you and your associates are interested in an onsite visit and/or presentation on a these topics or others, please contact [June Caswell](#) as soon as possible.

SAE Congress (Detroit, MI: April 12-14)

Jim McLeish will be attending the [SAE World Congress](#) in Detroit, MI to support DfR's activities in automotive reliability. For more information contact [Jim McLeish](#).

Fundamentals of Random Vibration and Shock (College Park, MD: April 19-21)

Wayne Tustin, recognized internationally in the field of shock and vibration testing, will be presenting his three-day Fundamentals of Random Vibration and Shock Testing course at DfR Solution's headquarters facility. The course will address how to measure vibration and shock, calibrate measurement systems, convert field measured data into a test program, interpret results, define methodologies for shock and vibration testing and more. To register for this course please visit the [Equipment Reliability Institute's website](#).

IMAPS New England Symposium & Expo (Boston, MA: May 3)

Nathan Blattau will be making a presentation entitled "Automated Design Analysis: Accurately Capturing Warranty and End-of-Life Risks Early in Product Development," at the IMAPS New England Symposium & Expo. For more information on this topic, contact [Nathan Blattau](#).

DfR Solutions in New England (Boston, MA: May 2-5)

Nathan Blattau will be visiting companies in the New England area discussing a variety of topics related to reliability prediction and failure analysis of electronic components, products, and systems. If you and your associates are interested in an onsite visit and/or presentation while Nathan is in New England, contact [June Caswell](#).

International Conference on Soldering and Reliability (Toronto, Canada: May 3)

Cheryl Tulkoff will be presenting courses at the International Conference on Soldering and Reliability entitled "High Reliability: Solving Problems with Reliability in the Lead-Free Era" and "Second Generation Lead Free Alloys: Is SAC the Best We Can Do?" To register for the conference, visit the [SMTA website](#). For more information, please contact [Cheryl Tulkoff](#).

DfR Solutions in Canada (Toronto, Canada: May 3-6)

Cheryl Tulkoff will be visiting companies in the Toronto, Canada area discussing a variety of topics related to design, manufacturing, and testing of electronic components, products, and systems. If you and your associates are interested in an onsite visit and/or presentation while Cheryl is in Canada, please contact [June Caswell](#).

iMAPS High Reliability Microelectronics for Military (**Baltimore, MD: May 17-19**)

The International Microelectronics And Packaging Society (IMAPS) is sponsoring an [Advanced Technology Workshop](#) on military high reliability packaging issues and applications which is chaired by [Greg Caswell](#). The technical program will focus on the latest military electronic devices, systems, and applications with particular emphasis on system level issues that have an impact on mission assurance as well as the connected issues at the design and applications level. Abstracts are currently being solicited for the technical program. To register for this conference, please contact [Greg Caswell](#) or go to the [website](#).

International Applied Reliability Symposium (**San Diego, CA: June 7-9**)

Randy Schueller will present "Physics of Failure in Five Minutes" at the [2011 International Applied Reliability Symposium](#). For more information, or to arrange a meeting during the conference, please contact [Randy Schueller](#).

Product Development Webinar (**June 30**)

Jim McLeish will present a webinar entitled "How to Accelerate Automotive Product Development." [Registration](#) is now open. For more information, contact [Jim McLeish](#).

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