



April 2012 Newsletter

[Sherlock Adds DFMEA](#) | [DfR ISO 9001 Certified](#)

Sherlock Adds Failure Mode Effects Analysis (DFMEA)

What's the problem with DFMEA? A laborious process that can hide real problems, it is an activity stuck in the last century and it's not getting easier with more complex designs. The solution? DfR's [Automated Design Analysis™ software tool, Sherlock](#). Sherlock automatically creates and [prepopulates your DFMEA spreadsheet](#) based on intelligent parsing of standard design files and DfR's knowledge of component failure modes. Save hundreds of man-hours a year and allow your team to focus on only the most important elements of the DFMEA. For more information on how Sherlock can improve your product development process, please contact [Tom O'Connor](#).

Through Silicon Vias (TSV)

3D packaging is upon us, at least that is the [prevalent view](#) based on recent [announcements](#). However, reliability of a key element in this technology, through silicon vias (TSVs), has not always been fully addressed. In his highly opportune presentation entitled "[Predicting the Reliability of Zero Level TSVs](#)," [Greg Caswell](#) reviews the latest knowledge on TSV failure mechanisms and how they can influence device performance. For more information or to learn how to work with DfR on incorporating this technology into your product, contact [Greg Caswell](#).

Solar Power - To Infinity and Beyond!

What do you have when you combine temperatures above 100C, temperature swings as much as 60C, 25 year lifetimes, and failure rates lower than a piece of glass? [A solar microinverter](#). While it is revolutionizing solar power, the requirements are challenging for reliability prediction and assurance. In this [insightful presentation](#), [Cheryl Tulkoff](#) and [Randy Schueller](#) provide a roadmap for meeting customer expectations for microinverter or any other electronics that need to perform in a challenging environment. For more information, contact [Cheryl](#) or [Randy](#).

Optimize the Quality of Your PCB

One of the most feared PCB failure mechanisms is conductive anodic

Sherlock

[Automated Design Analysis™](#)



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Tenth Annual MEMS Technology Symposium

Wednesday, May 23, 2012

Hyndham San Jose, San Jose, CA

MEPTEC is pleased to be holding

our [10th Annual MEMS](#)

[Technology Symposium](#). To

celebrate a decade of bringing

hundreds of experts and

thousands of attendees together,

we are going to jumpstart the

next decade with a bold

prediction: how to reach \$1

trillion dollars MEMES market in

the next ten years.

filaments (CAF). CAF is the migration of copper within a PCB under an applied bias, almost always occurring between two plated through holes. The most important step in prevention is good design using [Sherlock](#). The second most important step is [making sure your supply chain is using the right materials](#). For more information on understanding the chemistry and how to spec it, contact [Seth Binfield](#).

Best Scientific Lecture...Ever!

DfR Solutions routinely provides courses with extensive technical and insightful content to a wide range of audiences. These courses can address a variety of topics, including DfR, DfM, Pb-free, Root Cause Analysis, Circuit Simulation, Capacitor Technology, Physics of Failure, and Cleanliness and Contamination. However, as superb as our instructors are, they can only hope to come close to the amazing lexicon of this [short instructional video](#). For more information on our training offerings, contact [Ed Dodd](#).

The Showdown at the 'Coating Corral'

Don't miss a technical session for the ages. On November 14th at the [IPC/SMTA Coating and Cleanliness Conference](#) in Chicago, DfR Solutions has gotten (put together) all of the companies at the leading edge of nano-coating technology. These heavyweights include [Ross Technology](#), [Semblant](#), [P2I](#), [GVD](#), and [HzO](#). Watch in awe as they throw down the gauntlet to see whose technology deserves to be called 'Best of the Best'. For more information, contact [Craig Hillman](#).

DfR News

DfR Solutions and Global SMT and Packaging

DfR Solutions is proud to announce that Craig Hillman will be writing a monthly column on reliability, failure analysis, and new technologies for the leading electronics technology magazine, [Global SMT and Packaging](#). Look for his first column in the May issue.

DfR Receives ISO 9001:2008 Certification

DfR is pleased to announce that we have received the [ISO 9001:2008 Certification](#) for reliability, quality, and durability consulting and research to the electronics industry. For more information on how our quality system makes us the right partner for you, please contact [Walt Tomczykowski](#).

DfR Wins 2nd Editor's Choice Product Award

DfR Received its 2nd Editor's Choice Product award in less than six months, this time from [Military Embedded Systems Magazine](#). The official announcement will be in the April/May edition. DfR is very proud to have received this recognition for our advanced reliability analysis software. For



Design and testing services for IC, ASIC, PCB and MEMS. Sensing Machines provides engineering consulting services to transition your ideas from concept to hardware. We help small and large companies perform R&D as well as bring products to market. Visit our [website](#) or send an [email](#) for an overview of our capabilities.

more information on Sherlock and what makes it so unique, contact [Nathan Blattau](#).

Interview with Cheryl Tulkoff at IPC APEX

As Cheryl Tulkoff's reputation as a DfM guru continues to rise, organizations are jostling to get some of words of wisdom. Get a chance to hear a little bit of her special insight in this [interview at IPC APEX](#). For more information, contact [Cheryl Tulkoff](#).

Upcoming Events

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](#). For more information on a specific activity, please contact [June Caswell](#).

Airworthiness Conference (Baltimore, MD: April 2)

[Walt Tomczykowski](#) presented "Using Physics of Failure Based Software to Predict Remaining Avionics PCBA Life." For more information contact [Walt Tomczykowski](#).

DfR in Huntsville (Huntsville, AL: April 2-4 and May 21-23)

[Craig Hillman](#) and [Cheryl Tulkoff](#) will be visiting companies in the Huntsville area and are available to discuss DfR, component packaging, DFM, Root-Cause Analysis, Product Qualification Testing and Pb-free reliability. If you and your associates are interested in an onsite visit and/or presentation, please contact [June Caswell](#).

SMTA Webinar (April 12 & 19)

Cheryl Tulkoff presented a comprehensive webtorial on Pad Cratering, its causes, solutions, and how the transition to Pb-free brought visibility this mechanism. If you would missed this two part series and would like to bring it in-house, please contact [Cheryl Tulkoff](#).

Minnesota Reliability Consortium (April 18)

Randy Schueller gave a presentation on DfR's Sherlock Automated Design Analysis Tool to the Minnesota Reliability Consortium. For more information please contact [Randy Schueller](#).

DfR Webtorial (April 19, Noon EDT)

Walt Tomczykowski presented a webinar entitled "What Can Sherlock Do For You-Planned Maintenance? For more information on this informative event please contact [Walt Tomczykowski](#).

DfR Solutions in Boston (Boston, MA: April 23-25)

[Nathan Blattau](#) and [Tom O'Connor](#) will be visiting companies and clients in the Boston area. If you would like to have them stop by and give a brief technical presentation to you and your colleagues and discuss how [Automated Design Analysis™](#) can improve the product development process and reduce warranty returns, contact [Tom O'Connor](#).

DfR Solutions in England/Scotland (UK: April 23-26)

[Petri Savolainen](#) and Craig Hillman will be visiting numerous companies in the England and Scotland. Their schedule is quite full, but if you would like to have them stop by and give a brief technical presentation and discuss how [Automated Design Analysis™](#) can make your job easier, please contact [June Caswell](#) or [Petri Savolainen](#).

AEC Reliability Workshop (Detroit, MI: April 24-26)

[Jim McLeish](#) will be making a presentation entitled "Reliability Challenges of Flat No-Lead (FNL) ICs in Automotive Electronics," at this workshop. FNL, aka QFN, packages can be especially problematic in demanding automotive environments. Learn more about the issue and potential solutions. For more information or to arrange a presentation at your location, please contact [Jim McLeish](#).

Avionics Maintenance Conference (Anchorage, AK: April 30-May3)

[Walt Tomczykowski](#) and [Craig Hillman](#) will be attending this critical industry conference and presenting case studies on how DfR's Sherlock software could have been used to avoid or mitigate many of the issues identified and discussed by the conference attendees. If you would like to meet with Walt and Craig, please contact [June Caswell](#).

DfR Solutions in The Netherlands (The Netherlands: May3-4)

[Cheryl Tulkoff](#) and [Petri Savolainen](#) will be visiting companies and clients throughout Netherlands and are available to discuss DfM, Root-Cause Analysis, and Product Qualification Testing. If you and your associates are interested in an onsite visit and/or presentation, please contact [June Caswell](#) or [Petri Savolainen](#).

DfR Solutions in Germany (May 7-11)

[Cheryl Tulkoff](#) and [Viktor Tiederle](#) will be visiting companies and clients throughout Germany and are available to discuss DfM, Root-Cause Analysis, and Product Qualification Testing. If you and your associates are interested in an onsite visit and/or presentation, please contact [June Caswell](#) or [Viktor Tiederle](#).

SMT Hybrid Packaging Conference (Frankfurt, Germany: May 8 &

10)

Cheryl Tulkoff will be presenting a half-day tutorial on "[Design for Reliability and Sourcing of Printed Circuit Boards](#)" on May 10. When registering, remember to select [Session 16](#). Later on the same day, Cheryl has been invited to participate on a panel discussion on the "Reliability of Power Modules." Please contact [Viktor Tiederle](#) for more details.

DfR Solutions in Michigan (MI: May 14-18)

[Craig Hillman](#), [Jim McLeish](#), and [Tom O'Connor](#) will be visiting companies and clients throughout Michigan. If you would like to have them stop by and give a brief technical presentation to you and your colleagues and discuss how [Automated Design Analysis](#)™ can improve the product development process and reduce warranty returns, contact [Tom O'Connor](#).

PERM (Marseilles, France: May 15-16)

[Petri Savolainen](#) will be attending the [PERM meeting](#) at Eurocopter in Marseilles, France. He will be available for customer visits. If you would like to discuss a topic with Petri, please email [June Caswell](#) or [Petri Savolainen](#).

DfR Solutions in France (France: May 14-18)

[Petri Savolainen](#) will be visiting companies and clients throughout France and is available to discuss [Automated Design Analysis](#)™, electronic packaging, Pb-free, and liquid crystal displays. If you and your associates are interested in an onsite visit and/or presentation, please contact [June Caswell](#) or [Petri Savolainen](#).

Int. Conf. Soldering and Reliability (Toronto, ON: May 15-19)

[Greg Caswell](#) will be presenting "The Effect of Coating and Potting on the Reliability of QFN Devices." For more information, please contact [June Caswell](#). Greg will also be available for customer visits in the area. To arrange a visit please contact [Greg Caswell](#).

DfR Solutions in Toronto (Toronto, ON: May 14-18)

[Greg Caswell](#) will be visiting companies and clients throughout the Toronto and is available to discuss Automated Design Analysis, electronics manufacturing, MEMS technology, and component packaging. If you and your associates are interested in an onsite visit and/or presentation, please contact [June Caswell](#) or [Greg Caswell](#).

DfR in Huntsville (Huntsville, AL: May 21-23)

[Craig Hillman](#) and [Cheryl Tulkoff](#) will be visiting companies in the Huntsville area and are available to discuss DfR, component packaging, DFM, Root-Cause Analysis, Product Qualification Testing and Pb-free reliability. If you and your associates are interested in an onsite visit and/or presentation,

please contact [June Caswell](#).

Applied Reliability Symposium (New Orleans, LA: June 13-15)

[Jim McLeish](#) will present "The Transition from MTTF Reliability Predictions into Physics of Failure Reliability Assessments" at the [2012 Applied Reliability Symposium, North America](#). For more information, contact [Jim McLeish](#) or stop by the DfR booth.

DfR Webinar (June)

[Gregg Kittlesen](#) will be presenting this informative webinar on Plated Through Hole (PTH) Reliability. For more information or to register, please contact [Gregg Kittlesen](#).

Employment

Manufacturing Quality Engineer (full-time)

Manufacturing quality subject matter experts (SME) are needed to support the Department of Defense (DoD) in the area of systems engineering. This position will be onsite at government locations in the Washington, DC, and Northern VA area. US Citizenship is required. Must have an active security clearance (within the past two years). Travel is required 25% to 50% of the time. The SME develops, modifies, applies and maintains manufacturing and quality guidance and policy applicable to DoD weapon systems; incorporates design for affordability concepts into the manufacturing process; collaborates with reliability and logistics organizations within the DoD to ensure manufacturing guidance supports the objectives of DoD Instruction 5000.02, Operation of the Defense Acquisition System; and conducts manufacturing readiness assessments at prime contractor locations.

For more information, including how to apply, please visit our [website](#).

Reliability and Maintainability Engineer (full-time)

DfR Solutions is looking for a full-time system engineers with 10+ years of DoD acquisition experience and a strong reliability and maintainability background to work in the DC/VA area. Must have 10+ program/project management experience. US Citizenship is required. Must have an active security clearance (within the past two years).

Reliability and Maintainability (R&M) subject matter experts (SME) are needed to support the Department of Defense (DoD) in the area of systems engineering for land and sea systems. This position will be onsite at government locations in the Washington, DC, and Northern VA area. Travel is required 25% to 50% of the time. The SME develops, modifies, applies and maintains reliability guidance and policy (DTM 11-003)

applicable to DoD weapon systems; incorporates design for reliability in the acquisition life cycle; collaborates with reliability and logistics organizations within the DoD to ensure reliability guidance supports the objectives of DoD Instruction 5000.02, Operation of the Defense Acquisition System; and conducts program support reviews (focused on reliability and maintainability) at prime contractor locations.

For more information, including how to apply, please visit our [website](#).

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