



## January 2012 Newsletter

[DfR & ISD Italia Partner](#) | [Record Attendance at DfR Course](#)

### DfR Open House

DfR's first Open House was a huge success with over 40 people touring the DfR facility, participating in a demonstration of our [Sherlock Automated Design Analysis™ tool](#), and attending four first-class technical presentations. In case you missed it,

- [Walt Tomczykowski](#) presented an introduction to [Physics-Based Modeling](#) and its application to part, box and system-level life predictions
- [Greg Caswell](#)'s presentation on [Advanced Packaging](#) addressed the latest advances in microelectronic packaging, including Copper Wire Bonds, Through Silicon Via (TSV), and QFNs.
- [Jim McLeish](#) discussed the basics of good [Design for Manufacturability](#) and how to implement these best practices in multiple industries.
- [Dr. Randy Schueller](#) provided a thorough review of the latest challenges and improvements in [Pb-free](#), including new solders, new platings, and new approaches to tin whiskers.

### Survey of the Month: Conformal Coating

As a service to our valuable readers, DfR has launched our [Survey of the Month](#). Its purpose is to help you gain deeper insight into the latest and greatest within the electronics industry. By participating, you receive a free summary of the survey results. This [Survey of the Month](#) focuses on conformal coatings.

### REACH Moves Forward

The European Chemicals Agency (ECHA) [has added twenty \(20\) more materials](#) to the [Candidate List of Substances of Very High Concern \(SVHC\)](#). While none of the materials tend to be present in electronics, companies must stay abreast of these changes and be aware of their [legal obligations](#). For more information or guidance, please contact [Craig Hillman](#).

### Application-Specific Integrated Circuits (ASICs) - The Secret to

## Sherlock

[Automated Design Analysis™](#)



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**The Heat Is On 2012**  
**March 19, 2012**  
**Doubletree Hotel, San Jose, CA**  
MEPTEC is pleased to announce the continuation of their "[Heat is On](#)" symposiums, which for the second year will be co-located with the 28th Annual [SEMI-THERM](#) conference and exposition.

## Good Design (Part 2)

The ASIC design flow is a complex process with many important details. First-pass success is desired, but it requires a few iterations to get the information needed to fully meet specifications. DfR can provide support and guidance to help you navigate this process, which is delineated in this [white paper](#). For more information, contact [Francisco Tejada](#).

## Cleanliness - the DfR Way

Way overdue, [IPC-5704](#) requires the use of ion chromatography (IC) to identify the amount and type of contamination present in printed boards. The document also sets a limit for each contaminant, providing clear pass/fail criterion. It is good to see an industry standard in line with best practices championed by DfR Solutions. DfR performs IC testing routinely for our customers and can help you assure the cleanliness of your electronics. For more information, contact [Seth Binfield](#).

## DfR News

### DfR and ISD Italia Partner on Sherlock

DfR is [proud to announce](#) that ISD Italia, a leading supplier of software solutions for the electronics industry, will be supporting Sherlock sales and services in Southern Europe and Mediterranean region. For more information, please contact [Stefano Barbati](#).

### Walt Tomczykowski Re-Elected Vice Chair of GIDEP Industry Advisory Group

DfR is proud to announce [Walt](#)'s continued participation of this [important industrial organization](#). Walt's leadership and insight has become critical as industry and government respond to recent [Counterfeit Parts Legislation](#). As stated by Jim Stein, GIDEP Program Manager, *"Walt's breadth and depth of knowledge in the subjects of DMSMS and non-conforming materiel results in his perspectives carrying a lot of weight."* For more information on DfR's counterfeit activities, please contact [Walt](#).

### Record Attendance at DfR's Modeling and Simulation in Electronic Packaging Course

A packed audience at the 2011 Electronic Packaging and Technologies Conference listened to [Craig Hillman](#) provide a comprehensive understanding on how to model and simulate the reliability of the latest semiconductor packaging technologies, including copper wire bonds, through silicon vias (TSV), package on package (PoP), and low glass transition temperature (Tg) underfill. For more information on how DfR is driving modeling and simulation (M&S) to the common engineer, please contact [Nathan Blatta](#).

## **DfR Solutions asked to give keynote at DSO National Laboratories Reliability Seminar**

[Craig Hillman](#) was recently invited to give the keynote address at the 2011 Reliability Technical Seminar at Singapore's DSO National Laboratories. In his presentation on "Understanding Commercial Best Practices for Ensuring Quality, Reliability, and Durability," Dr. Hillman detailed how leaders in the commercial electronics marketplace have developed effective and methodical processes for ensuring product by laying a foundation of knowledge, early engagement, quality control, and trust-but-verify techniques. For a copy of the presentation, please contact [Ed Dodd](#).

## **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](#).

## **Upcoming Events**

### **RAMS Conference (Reno, NV: January 23-26)**

[Walt Tomczykowski](#) will be presenting a tutorial "Introduction to Physics of Failure: Delivering Reliable Products" at the [RAMS Conference](#). In addition, Walt and [Ed Dodd](#) will be manning the DfR booth in the exhibit area. Be sure to stop by and visit with them. For more information contact [Walt Tomczykowski](#).

### **PERM Meeting (Arlington, VA: February 2)**

[Craig Hillman](#) and [Joelle Arnold](#) will be making a presentation on the status of DfR's [two SBIR programs](#) addressing the reliability of reballed BGAs and the reliability of various Pb-free component packages when subjected to shock and vibration testing. For more information contact [Joelle Arnold](#).

### **GIDEP Meeting (San Diego, CA: February 6-8)**

In his role as vice-chair, [Walt Tomczykowski](#) will be helping this industry-governmental body understand how to respond to recent counterfeit legislation.

### **DfR Solutions in Orange County/Los Angeles (February 8-10)**

Walt Tomczykowski will be visiting companies in Southern California and is available to discuss counterfeits, obsolescence, physics of failure, system-level reliability and total lifecycle management. If you and your associates are interested in an onsite visit and/or presentation, please contact [June Caswell](#).

### **DfR Solutions in Connecticut (February 7-10)**

[Greg Caswell](#) will be visiting companies in Connecticut and is available to discuss TSV technology, LEDs, MEMS packaging, and benchmarking your supply chain. If you and your associates are interested in an onsite visit and/or presentation, please contact [June Caswell](#).

### **APEC Conference (Orlando, FL: February 8)**

[Craig Hillman](#) will be making a presentation at the [Applied Power Electronics Conference](#). His presentation will be on "Using Physics and Industry Best Practices to Predict the Lifetime of LED Power Supplies." For more information contact [Craig Hillman](#).

### **ASQ Reliability Division Webinar (Virtual: February 9, Noon EST)**

[Jim McLeish](#) will be presenting "Introduction to Physics of Failure Reliability Methods" during this webinar. For more information, please visit the ASQ website.

### **SMTA Houston Chapter (Houston, TX: February 9)**

[Cheryl Tulkoff](#) will be making a presentation entitled "Advances and Challenges in High Temperature Component Attachment" at this local chapter meeting. For more information contact [Cheryl Tulkoff](#).

### **DfR Solutions in Houston (February 9-10)**

[Cheryl Tulkoff](#) will be visiting companies in the Houston area and is 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](#).

### **DfR Solutions in Pittsburgh (February 9-10)**

[Craig Hillman](#) will be visiting companies in the Pittsburgh area and is available to discuss DfR, component packaging, and Pb-free reliability. If you and your associates are interested in an onsite visit and/or presentation, please contact [June Caswell](#).

### **Central Texas Electronics Association (Austin, TX: February 21)**

[Greg Caswell](#) will be making a presentation on "Challenges with Package on Package (PoP)" at this local chapter meeting of IMAPS/SMTA and IPC members. For more information contact [Greg Caswell](#).

### **IPC APEX Conference (San Diego, CA: February 26-March 1)**

[Cheryl Tulkoff](#) will be teaching her highly regarded course on Design for Manufacturability on Sunday, Feb 26th, in addition Cheryl will be moderating these 2 sessions at [APEX 2012](#).

S19 - Wednesday, February 29, 10:15am-11:45am - PCB Hole Fill

- S31 - Thursday, March 1, 10:15am-11:45am - Pad Cratering

If you would like to meet up with Cheryl at IPC APEX, please contact [June Caswell](#).

### **DfR Solutions in San Diego (February 26-March 1)**

[Cheryl Tulkoff](#) will be visiting companies in the San Diego area and is 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](#).

### **IMAPS Device Packaging Conference (Scottsdale, AZ: March 6-8)**

[Greg Caswell](#) will be making a presentation at the DPC entitled, "Predicting the Reliability of Zero-Level TSVs." For more information contact Greg Caswell.

### **DfR Solutions in Arizona (March 6-8)**

[Greg Caswell](#) will be visiting companies in Arizona and is available to discuss TSV technology, LEDs, MEMS packaging, and benchmarking your supply chain. If you and your associates are interested in an onsite visit and/or presentation, please contact [June Caswell](#).

### **Reliability Innovations Conference (San Jose, CA: March 16)**

[Ed Wyrwas](#) will be making a presentation at this conference focusing on "Addressing the Reliability of Silicon Systems using Physics of Failure." For more information contact [Ed Wyrwas](#).

### **DfR Solutions in Bay Area (March 14-16)**

[Ed Wyrwas](#) will be visiting companies in the Bay Area and is available to discuss integrated circuit reliability at 45nm and below and solid state drive performance. If you and your associates are interested in an onsite visit and/or presentation, please contact [June Caswell](#).

### **DfR Open House (College Park, MD: March 19)**

DfR will be hosting another open house at our facility on the 19th. We will have four (4) technical presentations by deep subject matter experts, a tour of DfR's facility and a demonstration of DfR's Automated Design Analysis software-Sherlock. For more information, contact [Tammy Smittenaar](#).

### **SMTA Solar Reliability Conference (San Jose, CA: March 21-23)**

[Randy Schueller](#) will be making a presentation entitled "Reliability Modeling of Electronics for Solar Inverters" at this new conference. For

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more information, contact [Randy Schueller](#).

### **DfR Solutions in Bay Area (March 20-23)**

[Randy Schueller](#) will be visiting companies in the Bay Area and is available to discuss material selection, Pb-free mitigation strategies, and the latest printed board technologies. If you and your associates are interested in an onsite visit and/or presentation, please contact [June Caswell](#).

### **Airworthiness Conference (Baltimore, MD: April 2)**

[Walt Tomczykowski](#) will be presenting [Using Physics of Failure Based Software to Predict Remaining Avionics PCBA Life](#). In addition, Walt and [Tom O'Connor](#) will be manning the DfR booth in the exhibit area. Be sure to stop by and visit with them. For more information contact [Walt Tomczykowski](#).

### **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.

### **SMTA Webinar (Anchorage, AK: April 30-May 3)**

[Cheryl Tulkoff](#) will be presenting "Pad Cratering and Pb-Free" during these webinars. For more information, please contact [June Caswell](#).

### **SMT Hybrid Packaging Conference (Frankfurt, Germany: Jay 8 & 10)**

[Cheryl Tulkoff](#) will be presenting two half-day tutorials at this conference. The first will be "Design for Reliability" on May 8. The second tutorial will be "Sourcing of Printed Circuit Boards" on May 10. For more information, please contact [June Caswell](#).

### **DfR Solutions in Germany (May 7-11)**

[Cheryl Tulkoff](#) will be visiting companies in Germany and is 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](#).

### **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](#).

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

[Jim McLeish](#) will be presenting, "The Transition from MTTF Reliability Predictions into Physics of Failure Reliability Assessments." For more information, contact [Jim McLeish](#).

## Employment

### CAD/CAE Engineer

DfR is looking for mechanical engineer with experience with Abaqus finite element method (FEM) software.

The position has two primary responsibilities. The first responsibility is performing FEM simulations for Fortune 500 companies. The focus of the FEM simulations will primarily be on electronics and microelectronics packaging. Examples include vibration of circuit cards, temperature cycling of chip scale packages, and bending of fiber optic channels. These consultations may also periodically involve testing to validate FEM predictions.

The second responsibility is to provide support to customers of Sherlock Automated Design Analysis™ software. The tool performs physics-based reliability predictions and design rule checks for the electronics industry. Some of the analysis involves an embedded FEM engine. A successful applicant will be thoroughly trained on the architecture and capabilities with the software and will be expected to train customers, answer questions, and perform analyses using the software. A minor amount of travel (once or twice a quarter) may eventually be required as part of this position.

The ideal candidate will thoroughly enjoy problem-solving and have the ability to communicate findings, both verbally and in writing, to customers. A Masters' Degree in Mechanical Engineering is highly preferred, but work experience may be an acceptable substitute. Applicants must also be comfortable working as part of a team with people from a variety of technical backgrounds. An availability to start immediately is preferred.

Qualified individuals should [e-mail](#) their resume along with a cover letter.

### Reliability Manager

Full-time onsite at customer location in Washington, DC, metro area.

Individual will utilize a thorough knowledge of the DoD 5000 acquisition process to draft policy and guidance documents and to review DoD major weapons systems reliability and maintainability documentation. Individual will supervise a team of reliability engineers and analysts. This is a fast-

paced, high-visibility position that requires the applicant to be highly engaged, capable of managing multiple tasks, writing comprehensive reports and meeting critical deadlines. Position includes travel up to 25% of the time.

Required:

- Highly skilled in presenting to senior leadership in both industry and government
- Thorough knowledge of reliability improvement, growth theory and practice, and the DoD 5000 acquisition process to include the Defense Acquisition Guide
- 20 years experience working in the DoD system program office
- Minimum M.S. degree in engineering
- Secret clearance and US citizenship

Preferred:

- Cross-domain experience (air, land, sea, space) is a plus

Qualified individuals should [e-mail](#) their resume along with a cover letter.

### **Reliability Analyst / Engineer**

Full-time onsite at customer location in Washington, DC, metro area.

Required:

- DoD 5000 acquisition directives and regulations
- DoD major weapons systems development timeline with an emphasis on reliability and maintainability activities
- Reliability design principles and practices including part selection, physics of failure, R&M math models, etc.
- Best practices in test development and execution including HALT/HASS, reliability growth tests, accelerated life testing, etc.

Required Experience/Education:

- Minimum 10 years of experience including direct experience with system-level technical reviews
- Minimum B.S. degree in engineering
- Secret clearance and US citizenship

Preferred:

- Cross-domain experience (air, land, sea, space) a plus
- Certified Reliability Engineer (CRE)

Green Belt Six Sigma

Qualified individuals should [e-mail](#) their resume along with a cover letter.

## **Advertisement**

Advertise here and reach more than 12,000 electronics professionals. DfR Solutions is now accepting advertisements in the DfR newsletter. For more information, contact [Tammy Smittenaar](#).