EIPC SPEeDNEWS

The Weekly On-Line Newsletter from the European Institute of Printed Circuits.
Issue 5 – February 2020

ELECTRONIC INDUSTRY NEWS

China Can't Put a Mask on Virus' Impact

By Junko Yoshida

The Covid-19 coronavirus outbreak in China has exposed the best and the worst aspects of the world's biggest totalitarian nation.

You don't need to be a scientist or an engineer to understand that a midstream change in your data collection methods isn't a good idea. Not only does it disrupt data integrity, but it also muddles your analysis.

That's what unfolded in China on Thursday.

Hubei province reported 14,840 new cases of the dread coronavirus, a tenfold surge over Wednesday's toll, while new fatalities more than doubled to 242. Before that, China had been saying that the rate of infections across a span of eight days had stabilized. But a new number, based on a new methodology, queered that narrative.
The Covid-19 coronavirus outbreak in China has exposed the best and the worst aspects of the world's biggest totalitarian nation.

On one hand, China's aversion to transparency has fueled fear, making the world more suspicious of official Chinese data and its other announcements about the epidemic.

On the other hand, sequestering its citizens at home for more than ten days in the name of disease "prevention and control" is a massive social experiment that few nations other than China could have enforced.

For people outside China, the coronavirus crisis has manifested itself in shocks such as the cancellation of the Mobile World Congress (MWC), or horror stories of people trapped on cruise liners with other infected travellers.

To many people in the United States, this is a China story. But look again. MWC is a global event with seismic impact on the world economy in general and particularly in the China-dependent electronics industry. If the epidemic isn't contained in relatively short order, there will be serious consequences for the computer industry, the automotive industry, the communications industry, the travel industry, and more.

What our colleagues are saying

But what is actually going on in China? Fortunately, we have colleagues at *EE Times China* on the ground in Shenzhen and Beijing.

Our team is working around the clock from their homes, pumping out reportage that illuminates the impact of the outbreak on the electronics industry. As of this week, none on our team, however, has returned to the office in Shenzhen.

We hold regular meetings via WeChat and inquire about how things are going in China. They maintain normalcy, sound good-natured, and sometimes even laugh about their predicament.

But obviously, that can't be the whole story.

Picture a life in which you're not allowed, for ten days or more, to set foot out of your own house. Imagine living with kids locked out of school (and underfoot) for weeks. Picture an endless cycle of takeout food, broken only by a delivery of groceries.

Daily life in this state of voluntary house-arrest is anything but normal. I posed this issue to Echo Zhao, one of my colleagues. She told me, "If policemen and hospital workers are risking their lives to save those infected on the front line, staying home — not going outside — is the least we can do for the country."

Reflexive patriotism? Perhaps.

I also know she's sincere. She isn't just spouting the Party line. She represents 1.4 billion ordinary Chinese people who are determined to survive.

She wants to be resilient.

Many ordinary Chinese people just wanting to do whatever they can to get through the crisis. One story was filed this week by another colleague, Luffy Liu. It's entitled "[700 Tech Companies in China Have Begun Making Masks](#)."

He wrote about automotive companies (i.e. BYD and others) and smartphone manufacturers (i.e. Foxconn et al) converting production lines to make surgical masks. Right now, Wuhan's nine million residents could use as many as 20 million masks a day, but they don't have them

enough. Companies of all types are scrambling, switching production to meet the demand for masks from more than a billion frightened people.

Opportunistic? Yes.

Some overnight mask manufacturers are obviously in it for the money.

But some are in it for the sake of self-preservation. Foxconn, for example, has nearly a million employees. If Foxconn wants its workers to be back on the assembly lines while meeting the local government's disease prevention guidelines, it needs to hoard the almost two million masks it's planning to produce for internal use.

Meanwhile, according to a [notice recently issued by the Guangdong Provincial People's Government](#), the provincial government will provide relevant enterprises with funding support for companies expanding mask production, mask manufacturing machines, and other urgently needed equipment and materials.

Resumption of work

Earlier this week, many companies started to restore operations. The resumption of work, however, is no cakewalk. Guangdong province, for example, has reiterated that companies must manage the resumption of work and production by "coordinating the return of employees, especially professional technicians, and the purchase of preventive and control materials such as masks, protective clothing, disinfection supplies, and thermometers."

In math-class terms, you've gotta show your work.

The rules don't apply to just the 800-pound gorilla in the province, Foxconn. Local companies of all size are under enormous pressure to ensure worker safety as they resume business.

Take the example of another behemoth, Huawei. As Huawei brings employees back, it faces new guidelines. During lunch time, for example, workers are required to sit no closer together than two meters, leaving each person all alone at a really big table.

The Guangdong provincial government, in a burst of classic bureaucratese, is ordering enterprises "to do a good job of employee health management; encouraging large enterprises to set up centralized isolation points; encouraging all kinds of development zones above the provincial level (high-tech zones, economic development zones, industrial parks) to set up centralized isolation points by the management committee."

It adds, "For small and medium-sized enterprises that do not have their own conditions for centralized isolation, the local government will make centralized arrangements."

Industry get-togethers?

As people start getting back to the office, the electronics industry has begun resuming its industry meetings, with mixed results. One company just discovered that an employee who attended a recent industry get-together was infected by the Covid-19 coronavirus. Unaware of being contagious, this person met close to a dozen industry colleagues. Imagine what followed after the disclosure of that information. Companies had to look for not just who,

from which departments, attended the contaminated meeting, but whom they contacted afterward.

This sort of emergency detective work takes an emotional toll on large circles of potential victims that include friends, neighbors, colleagues and associates.

There have been several reports from China about neighbors also being encouraged to inform on one another, especially if they suspect someone is from Hubei. The New York Times last week reported that in the northern province of Hebei, for example, one county offered a bounty of 1,000 yuan, or about $140, for each Wuhan person fingered by an informant.

China's network of surveillance systems is at work at full vigor.

Reuters reported that when a man from Hangzhou returned home from a business trip, the local police got in touch. "They had tracked his car by his license plate in nearby Wenzhou, which has had a spate of coronavirus cases despite being far from the epicenter of the outbreak. Stay indoors for two weeks, they requested," according to Reuters.

As it turned out, this person, after staying home for about 12 days, got bored and broke out. "Not only did the police contact him," Reuters reported. "So did his boss. He had been spotted near Hangzhou's West Lake by a camera with facial recognition technology, and the authorities had alerted his company as a warning."

Big Brother is watching.

These anecdotes tend to reinforce Western reservations about China, making people wonder what it would be like to live there.

But the issue at hand is neither about whether Chinese like being surveilled or approve of neighbors spying on neighbors. Nor is it about whether we who live outside China approve of its society.

The reality exposed by the virus is that China can't be isolated forever. It's a house too big to quarantine. The world economy can't afford to stand still. Business must go on.

Our Chinese colleagues are now conducting a survey among more than a dozen companies in the electronics industry with offices in China.

Fendy Wang, managing chief analyst of *ESM-China*, *EETimes*' sister publication, sent us an email saying:

> *The outbreak of the new coronavirus in Wuhan-China has caused a significant impact on the electronics industry chain. In order to further investigate the impact of the epidemic, last week we sent a questionnaire survey to electronics companies. As of now, seven companies have responded. They are Arrow, Digi-key (telephone interview), Mouser, Resistor. Today, Oneyac, iCEasy, and a Chinese fabless-Runshi technology.*

In addition, Beijing-based principal analyst Lefeng Shao sent the questionnaire to international chip companies such as TI, NXP, ADI, TE, Onsemi, Renesas and others. Onsemi refused to accept the interview, ADI told us that they would respond next Monday, and the rest of the companies said that they had no time to respond.

Fendy is writing a story as I type my blog.

Our duty as reporters does not include recirculating feel-good stories approved by the Chinese government, or the echoes of those stories that Chinese companies might feel compelled to share. Everyone — inside and outside of China — needs to make decisions, not just about health but also about how to keep the global economy humming. Under any circumstances, incomplete information can lead to bad decisions, and false information tends to move people and companies into the wrong directions.

Finding accurate information and sharing it isn't just some nebulous principle; it is vital to a functioning economy and a functional society. We will continue to investigate the true impact of this crisis and report on the "work-arounds" that companies around the world are coming up with to keep themselves afloat.

As Bolaji Ojo, publisher of AspenCore Media, which owns *EE Times,* told me yesterday: "We're writing history. Let's get to work."

Junko Yoshida

Former beat reporter, bureau chief, and editor in chief of EE Times, Junko Yoshida now spends a lot of her time covering the global electronics industry with a particular focus on China. Her beat has always been emerging technologies and business models that enable a new generation of consumer electronics. She is now adding the coverage of China's semiconductor manufacturers, writing about machinations of fabs and fabless manufacturers. In addition, she covers automotive, Internet of Things, and wireless/networking for EE Times' Designlines. She has been writing for EE Times since 1990.

Engineers: Remaining Relevant in 2020 and Beyond

By Cabe Atwell

In the short term, there will be jobs for engineers in AI, big data, and VR. The resulting technologies are likely to eliminate millions of other jobs, however.

With 20 million manufacturing layoffs projected by 2030, continuing education has never been more important. Here are the top trends for 2020 and beyond.

It is in the moments we encounter robots in the grocery store and humanoids at the front desks of hotels that we realize we are already living in the future. We may not yet have self-driving vehicles and digital assistants that actually understand our commands (come on, Apple), but what experts refer to as the Industrial Revolution 4.0 is well underway. In actuality, the world has already changed the way humans live. From here on out, civilization will never be the same. But this is, of course, just the beginning.

Industry 4.0

Industry 4.0 refers to the fourth significant revolution to have occurred in the manufacturing sector. Manufacturing continues to be reinvented as technology advances. The earliest changes came through mechanization based on steam power, while later revolutions included manufacturing changes driven by the advent of electricity and computer-based automation. What experts call Industry 4.0 refers to how data and machine learning will be used to fuel the most advanced smart and autonomous systems the world has ever known.

It sounds cool, but it doesn't look good for jobs

20M jobs to be lost to automation

According to a recent report released by Oxford Economics, millions of labourers in the manufacturing sector are projected to lose their jobs to robots by 2030 — 20 million labourers to be exact.

And while most of the impact is expected to be felt by lower-skilled labourers, many economists agree that as technology advances, there simply will not be enough jobs to go around. The industries expected to be least impacted by technology are those that will always require a "human touch." This includes the arts, social work, and any other job functions requiring creativity, compassion, and social intelligence, according to Oxford.

What about engineers?

For us engineers, there exists a dichotomy. The future will be autonomous vehicles, drones that predict nuclear meltdowns, generative algorithms…, but none of it will come into being unless we (engineers) roll up our sleeves and build the world sci-fi novels have been envisioning for decades. While we are called to create the future, the data all suggests the same outcome: the technologies we are building will eventually replace us.

Live in the now

All the talk about massive layoffs and the elimination of various industries is, at this time, only speculation. We may very well be heading towards a 1984-esque dystopian future, but we aren't there yet. Today, we still have jobs to go to and concrete responsibilities to take care: paying our bills, supporting our families, etc.

The conundrum is that to remain relevant in our industries and to stay employable, we have to develop and maintain the skills the industry demands — i.e., we must bite the bullet and build the technologies that may outlast us.

Thus, this article will focus on the technologies expected to shape the next era of engineering and manufacturing so you can ensure you have the skills to remain relevant in your field for as long as is possible.

The technologies shaping 2020 and beyond

Data suggests the following technologies will shape Industry 4.0 and beyond.

AI and Automation — Artificial Intelligence is behind many of the technological advancements driving Industry 4.0. AI makes it possible for systems to independently learn from and respond to input and data (automation) — a critical component of applications such as self-driving cars, smart manufacturing systems, and machine learning programs.

The potential of AI and automation has yet to be realized and there is significant demand for engineers who can design the software, electronic, and mechanical systems necessary for developing these smart systems.

Big Data — AI and technologies such as machine learning wouldn't be possible without Big Data. All IoT-connected devices and systems collect data, but not all data is created equal. As the cloud network becomes overloaded with information, the demand for architecture engineers who can build systems to sort and manage data has increased. And while some of these jobs might entail developing programs for marketers to better target users with ads, other jobs are more important, such as the development of functions that allow self-driving cars to respond to stimulus in real time.

Generative Design and Digital Twins — Generative Design and Digital Twins are already revolutionizing product development. Generative Design refers to software programs in which engineers can enter parameters specific to design requirements (materials, IP rating, etc.) and the program will generate a list of every design possible (sometimes thousands of designs) in minutes or seconds. While Generative Design may eliminate the need for things like dFMEAs, it significantly increases productivity and efficiency across product development teams.

Digital Twin technology is similar to Generative Design but differs in that it allows engineers to simulate a design and see how it behaves under real-world conditions. Development teams can observe a prototype in action, identify areas of weakness, and iterate before spending a dollar on a physical prototype.

Green Tech — Significant development is happening in the green tech space, and for good reason. Climate change is real and even if we can cap the global temperature increase at 2° C, that still doesn't ensure the planet can sustain the growing population.

As such, scientists have been busy developing things such as sustainable artificial meat, waste-eating chemicals for landfills, systems to clean plastics from the ocean, and safe systems for clean energy. If saving the planet is your passion, there are numerous ways to get involved on the tech side and develop technologies that could save us all.

VR/AR — Though it's been a number of years since anyone has mentioned Google Glass, virtual and augmented reality technologies continue to advance and investments in the technology have steadily increased. Augmented reality specifically is expected to significantly change how we get around and learn, with applications that include indoor maps of business campuses and 3D anatomical structures for medical students. VR and AR give us the ability to learn in a three-dimensional space, making science cool again.

Robotics and 3D Printing — Robotics and 3D printing, or additive manufacturing, have been and will continue to shape what is possible in the manufacturing space. Robotic technology continues to advance, making way for humanoid receptionists and safer manufacturing installations. 3D printing, like AR and VR, is revolutionizing the medical industry with materials that have made it possible to manufacture artificial organs like pumping hearts. The world has been and will continue to change based on these technologies.

Final word

We live in a complex era. While it's exciting to see Trekkie technologies take shape in the real world, we simultaneously see how these technologies can create massive waves of unemployment across the globe (which some economists argue will make things such as universal income a norm). Still, every thorn is attached to a rose. With less time spent in a cubicle, we could spend our days enjoying our families, making art, and creating yet more inventions for an even more progressive future.

For now, we must keep a pulse on emerging trends to remain relevant this decade and beyond. So get out there, learn some new skills, and enjoy the ride until the last stop. Who knows. The experts might be wrong. Stranger things have happened.

SEMICONDUCTOR NEWS

Semiconductor Industry had the worst year since 2001

Donald Trump's trade war with China has been blamed for the semiconductor industry suffering its worst slump in 20 years. According to Bloomberg, the industry was walloped by the trade war between the largest chip producer, the US, and the largest consumer, China. Revenue fell 12 percent to $412 billion in 2019, the Semiconductor Industry Association said Monday in a statement. That's the biggest drop since 2001, when industry sales slumped 32 per cent as the dot-com bubble burst. The rate of decline last year abated with sales growing slightly in the fourth quarter from the preceding three month period, the industry association said. For that to continue, China and the US need to build on the phase one trade agreement announced last month. Memory chips were the hardest hit. Prices of those commodity chips fell as production outran demand. Memory revenue dropped 33 percent from 2018 led by declines in computer memory. All regions experienced a decline in demand. Sales in China, whose consumers and factories that supply finished products to the rest of the world account for more than one-third of global consumption of the electronic components, fell 8.7 percent, according to the SIA.

Memory Goes a Little Greener

TORONTO — The impact of components of digital devices such as smartphones is often lost amongst all the discussion of how to mitigate climate change, but memory makers have their own initiatives for contributing to environmental sustainability. Samsung Electronics' recently announced 512-gigabyte (GB) embedded Universal Flash Storage (eUFS) 3.0 was awarded Carbon Footprint and Water Footprint Certifications from the UK-based Carbon Trust, a globally accredited non-profit certification body established by the British government to accelerate the move to a sustainable, low-carbon economy. The certifications are the result of Carbon Trust's thorough assessment of the environmental impact of carbon emissions and water usage before and throughout the production cycle of Samsung's technology, based on international standards — specifically PAS 2050 for carbon footprint and ISO 14046 for water footprint. In simpler terms, it means the carbon footprint of Samsung 512 GB eUFS 3.0 is 13.4 kg CO_2, which is comparable to the amount that is absorbed by two 30-year-old pine trees in a year, while its water footprint is 0.31 m3 H_2O.

Energy Harvesting Underwater

I'm always interested in the creative approaches that engineers and others develop for energy harvesting. Of course, while there's great incentive to do so — energy harvesting has the glamour appeal of "something for nothing" — the reality is that it often takes a lot of work and cost to develop. Still, it can solve some otherwise intractable problems by providing power where primary batteries alone (or an AC line) are impractical. That's why a recent study by a team at MIT is fascinating. Not only did the researchers use a clever "twist" to harvest the energy, but they also tightly integrated the harvesting scheme with the data reporting itself. The team combined two very different phenomena — the piezoelectric effect and backscattering — to provide a modest data-rate, battery-free underwater sensor and data link, which they call a Piezo-Acoustic Backscatter (PAB) system. Backscatter itself is a well-known technique often used with passive RFID and other systems; it uses directed, impinging energy to stimulate, power, and provide a response, usually in the electromagnetic RF world.

Startup De-Identifies Data

How to win consumer trust when massive security breaches are announced by one consumer company or another seemingly every week? A start-up in Taiwan has developed an IC that might restore that lost trust. The consumer electronics industry loves talking about building trust and loyalty among consumers. The "consumer experience" is a veritable marketing mantra at every industry gathering. Privacy and safety are two tenets vital to winning consumer trust, but they never (as usual) emerged as serious topics at CES 2020. Sure, CES offered privacy panels and roundtables during which privacy chiefs from Facebook, Apple and Procter & Gamble made appearances.

But given Boeing's deadly 737 Max accidents and a growing backlash against big tech platform companies, was it too much to ask for at least one keynoter addressing the huge CES tech crowd with a "calls-to-arm" speech on privacy and safety? Put this omission in the "missed opportunities" file. Nonetheless, we came across at CES a little gem – a start-up building a chip designed for "de-identifying" private data. De Cloak, founded by two PhD's in Taiwan, is a spin-off of Etron Technology.

Ultrasound As A Treatment For Parkinson's Symptoms

There may be as many as 10 million people around the world with Parkinson's disease, an affliction that is often marked by tremors that can become quite severe. One of the few options to control such tremors requires a brain implant, but a growing body of research suggests that simple ultrasound might be an effective treatment. The use of an ultrasound technique for the treatment of tremors was conducted by the Department of Biotechnology and Applied Clinical Sciences of the University of L'Aquila and involved 39 patients. The researchers found that 95% of the patients involved saw an immediate reduction in tremors after treatment with high-frequency sound waves. This reinforces similar findings from other medical researchers. Some ultrasound devices have already received FDA approval for treating Parkinson's.

NEWS FROM THE UK

The UK's 2nd dedicated Agile for Embedded Conference on 18th March 2020

Designed to appeal to all – from the 'Agile curious' to those with varying experience in Agile for Embedded

Feabhas, the UK's leading independent provider of embedded software development training, is pleased to share the Agile for Embedded Conference 2020 Programme agenda.

Taking place on 18th March, the day includes **a keynote from Edwin Adriaansen, Global Software Director at Dyson who will be sharing 'The top 10 things you shouldn't do'**. The rest of the Programme includes a mix of user experiences and technical sessions, presented by: Niall Cooling, CEO, Feabhas, Dr Glenn Coates, Software in Real Time Ltd, Dr Roderick Chapman, Director, Protean Code Limited, Visiting Professor, University of York, Steve Dwyer, Principal Consultant & Head of Software Engineering, ITDev, and Dr James Hui, Engineering Specialist, Wind River.

In addition to the Conference Programme, there will be additional optional talks during the lunchtime break. These shorter 'Lunch and Learn' sessions will be hosted by QA Systems and Hitex, who will be sharing their expertise in the Agile space.

Jo Cooling, Director at Feabhas says "We want everyone to get as much as they can from the day. As we had such a good response to our call for papers, we looked for an innovative way to be able to include as many talks as possible, whilst maintaining a balanced Programme. As a result, we are offering additional talks that delegates can choose to attend during the lunch break. This means that delegates can now 'Lunch and Learn', attend the exhibition and network, in addition to attending the main Agile for Embedded conference sessions.

And for those who are new to Agile for Embedded and want an initial understanding of Agile software development, **Feabhas are offering a 'Springboard into Agile for Embedded' on 17th March**, also at Green Park.

This one-day classroom-based event is an excellent pre-cursor to the Conference and will be run by Niall Cooling. The topics covered include:

• understanding the principles of Agile Software Development
• appreciating Agile for Embedded is different from Agile for non-Embedded

• identifying the tools required to support Agile Software Development
• considering how Agile can be applied to software for High Integrity Systems development
• challenges and pitfalls of Agile

Attendees should have a good understanding of software development, including aspects such as design, coding and test."

For more information, please contact +44(0)1793 792909 or email conference@feabhas.com.

About the Conference
Venue: Green Park Conference Centre, 100 Longwater Avenue, Green Park, Reading, RG2 6GP
Conference Tickets: £100 plus VAT
Conference Tickets: https://www.eventbrite.co.uk/e/agile-for-embedded-2020-tickets-82969492987
Conference website: https://www.feabhas.com/agile-for-embedded-conference-2020

About the Springboard into Agile for Embedded Workshop
Tickets: £350 plus VAT (including a Conference ticket).
Workshop information: https://www.feabhas.com/news/springboard-into-agile-for-embedded
Workshop tickets: https://www.eventbrite.co.uk/e/springboard-into-agile-for-embedded-tickets-93086591501

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NEWS FROM THE IPC

IPC Calls for Participation in Electronics Materials Forum

BANNOCKBURN, Ill., USA, February 14, 2020 — IPC invites engineers, researchers, academics, technical experts and industry leaders to submit abstracts for the IPC Electronics Materials Forum – From Fabrication to Assembly – to be held June 18, 2020 in Raleigh, N.C., in conjunction with IPC SummerCom.

The Electronics Materials Forum will focus on developments in materials and processes associated with advanced electronics assembly and manufacturing. The content will focus on emerging technologies challenging existing material sets for board fabrication, assembly, and post-assembly protection.

Expert technical presentations are being sought in the following areas:

Substrate materials:
- Novel board laminates
- Surface finishes
- Solder mask advancements
- Flexible/wearable circuits
- HDI developments

Assembly materials:
- New solder alloys
- Flux development
- Cleaning chemistries
- Assembly process strategies
- Thermal interface solutions

Protective materials:
- Cleaning chemistries
- Conformal coatings
- Adhesives

- Underfills

An approximate 300-word technical conference abstract summarizing original and previously unpublished work covering case histories, research and discoveries must be submitted. The submission should describe significant results from experiments and case studies, emphasize new techniques, discuss trends of interest and contain appropriate technical test results.

Technical conference paper abstracts and course proposals are due February 27, 2020. To submit an abstract or course proposal, contact Brook Sandy-Smith, IPC technical conference program manager.

Volunteers honoured for contributions to IPC and the Electronics Industry at IPC APEX EXPO 2020

BANNOCKBURN, Ill., USA, February 14, 2020 — IPC presented Committee Leadership, Special Recognition and Distinguished Committee Service Awards on February 3 and 5 at IPC APEX EXPO 2020 at the San Diego Convention Center. The awards were presented to individuals who made significant contributions to IPC and the industry by lending their time and expertise through IPC committee service.

Receiving Committee Leadership Awards for their contribution to the 2-19b Trusted Supplier Task Group that developed IPC-1791, *Trusted Electronic Design, Fabricator and Assembly Requirements* were William May, NSWC Crane and Richard Snogren, Bristlecone LLC. Receiving Special Recognition Awards for their contribution to developing IPC-1791, were Peter Bigelow, IMI Inc.; Marc Carter; Aeromarc, LLC; Zhiman Chen CRRC Zhuzhou Institute Co., Ltd.; Don Dupriest, Lockheed Martin Missiles & Fire Control; Michael Ford, Aegis Software; Dennis Fritz, MacDermid Enthone Electronics Solutions; Ife Hsu, Intel Corporation; Joe Hughes, Hughes Circuits, Inc.; Mark Kirkman, SAIC; Mark McMeen, STI Electronics, Inc.; Kathy Nargi-Toth, Bowhead; David Reichert, DuPont; Stephanie Richards, Labinal Salisbury; Roger Smith, NSWC Crane; John Timler, SAIC; and Stephen Tisdale, Tisdale Environmental Consulting LLC.

Mike Carano, RBP Chemical Technology, Inc.; earned a Committee Leadership Awards for his outstanding contributions to 7-24 Printed Board Fabrication and Assembly Process Effects Subcommittee that developed IPC-9121, *Troubleshooting for Printed Board Fabrication Processes, Amendment 2.* Receiving Special Recognition Awards for their contribution to IPC-9121, were Paul Cooke, FTG Circuits; Tom Fitzgerald, TTM Technologies;

Denny Fritz, MacDermid Enthone Electronics Solutions; Gary Hirst, TTM Technologies, Inc.; Ife Hsu, Intel Corporation; Mike Jawitz, Raytheon Missile Systems; Sharissa Johns, Lockheed Martin Missiles & Fire Control; Suriyakan Kleitz, Schlumberger Well Services; Leo Lambert, EPTAC Corporation; Jennifer Ly, BAE Systems; Karen McConnell, Northrop Grumman Corporation; Joey Rios, Raytheon Missile Systems; Robert Roessler, ABB Critical Power; Anjana Shyamsundar, ABB Critical Power; David Sommervold, Henkel Corporation; Steve Tisdale, Tisdale Environmental Consulting LLC; and Miou Yamoaka, Meiko Electronics Co. Ltd.

Earning Special Recognition Awards for their contribution to 4-14 Plating Processes Subcommittee that developed IPC-4552B, *Performance Specification for Electroless Nickel/Immersion Gold (ENIG) Plating for Printed Boards,* were Scott Bowles, Lockheed Martin Space Systems Company; Denise Charest, Amphenol Printed Circuits, Inc.; Don Dupriest, Lockheed Martin Missiles & Fire Control; Joey Rios, Raytheon; David Sommervold, Henkel US Operations Corp.; and Ingrid Swenson, TTM Technologies, Inc**.**

For their leadership of 7-31bv J-STD-001 and IPC-A-610 Automotive Addendum Task Group that developed *J-STD-001GA/IPC-A-610GA Automotive Addendum to IPC J-STD-001G, Requirements for Soldered Electrical and Electronic Assemblies and IPC-A-610G, Acceptability of Electronic Assemblies,* Gaston Hidalgo, Toyota Motor North America; Jose Servin Olivares, Continental Temic SA de CV; Udo Welzel, Robert Bosch GmbH received Committee Leadership Awards. Receiving Distinguished Committee Service Awards for their contributions to the Automotive Addendum Task Group were Thomas Ahrens, Trainalytics GmbH; Mitsuhiro Asaka, Japan Unix Co., Ltd.; Jasbir Bath, Koki Solder America; Tiberiu Baranyi, Flextronics Romania SRL; Javier Cobos, Eaton Corporation; Robert Cooke, NASA Johnson Space Center; Alejandro Cruz, GPV Americas S.A.P. I de C.V.; Miguel Dominguez, Continental Temic SA de CV; Hans-Otto Fickenscher, Continental Automotive GmbH; Gunter Gera, Robert Bosch GmbH; Andrew Goddard, ZF; Robert Kinyanjui, John Deere Electronic Solutions; Yusaku Kono, Japan Unix Co., Ltd.; Alain Le Grand, Continental Automotive France SAS; Patrick Leidich, Robert Bosch GmbH; Stuart Longgood, Delphi Technologies; Walter Montoya, Senju Comtek; Stanton Rak, Continental Automotive Systems; Ivan Roman, Continental Automotive; Manuel Tabarez, Continental Automotive Nogales S.A. de C.V.; Toshiyasu Takei, Japan Unix Co., Ltd.; Wayne Thomas, Nexteer Automotive; Hans-Peter Tranitz, Continental Automotive GmbH; Indira Vazquez, Continental Temic SA de CV; and Thomas Zettner, Continental Automotive GmbH.

Receiving Committee Leadership Awards for their contribution to D-33a Rigid Printed Board Performance Specification Task Group that developed IPC-6012E, *Qualification and Performance Specification for Rigid Printed Boards* were Mark Beuchner, BAE Systems and Randy Reed, R. Reed Consultancy LLC. Earning Distinguished Committee Service Awards for their dedication to developing IPC-6012E, were Lance Auer, Conductor Analysis

Technologies, Inc.; Scott Bowles, Lockheed Martin Space Systems Company; Denise Charest, Amphenol Printed Circuits, Inc.; Don Dupriest, Lockheed Martin Missiles & Fire Control; Gary Ferrari, FTG Circuits; Vicka Hammill, Honeywell Inc. Air Transport Systems; Philip Henault, Raytheon Missile Systems; Nick Koop, TTM Technologies, Inc.; Clifford Maddox, Boeing Company; Chris Mahanna, Robisan Laboratory, Inc.; Joey Rios, Raytheon Missile Systems; Patrick Smith, Cirexx International; and Marshall Stolstrom, TTM Technologies.

Earning Committee Leadership Awards for their outstanding contributions to the D-11 Flexible Circuits Design Subcommittee that developed IPC-2223E, *Sectional Design Standard for Flexible & Rigid-Flexible Printed Boards,* were Mark Finstead, Flexible Circuit Technologies, Inc. and Bill Ortloff, Raytheon Company. Receiving Distinguished Committee Service Awards were Lance Auer, Conductor Analysis Technologies, Inc.; Gary Erickson, Sanmina Corp.; Kevin Kusiak, Lockheed Martin Space Systems Company; and Steven Murray, Northrop Grumman Corporation.

For their leadership of the 5-21m Cold Joining Press-Fit Task Group that developed IPC-9797, *Press-Fit Standard for Automotive Requirements and other High-Reliability Applications,* Hans-Peter Tranitz, Continental Automotive GmbH and Udo Welzel, Robert Bosch GmbH, earned Committee Leadership Awards. Receiving Distinguished Committee Service Awards for the contributions to developing IPC-9797, were Erika Crandall, TE Connectivity Germany GmbH; Hermann Eicher, EPT Guglhoer GmbH; Philippe Jaeckle, Robert Bosch GmbH; Frank Uibel, Uibel Consulting; and Heike Woldt, Diehl Metal Applications GmbH.

Receiving Committee Leadership Awards for their outstanding contributions to 5-33a Conformal Coating Task Group that developed IPC-CC-830C, *Qualification and Performance of Electrical Insulating Compound for Printed Wiring Assemblies,* were Brian Chislea, Dow Corning and Jeffrey Sargeant, Humiseal Division of Chase Corporation. Earning Special Recognition Awards for their dedication to the 5-33a Conformal Coating Task Group, were Lloyd Duso, Diamond-MT Inc.; Ben Gumpert, Lockheed Martin Missile & Fire Control; Jason Keeping, Celestica International L.P.; Phil Kinner, Electrolube; Richard Litavis, Paradign Inc.; Randy McNutt, Northrop Grumman Aerospace Systems; Graham Naisbitt, Gen3 Systems Limited; Doug Pauls, Collins Aerospace; Amanda Rickman, Raytheon Systems Company; Barry Ritchie, Electronics Protection Chemistries Group; Stefan Schroeder, Lackwerke Peters GmbH & Co KG; John Waryold, Humiseal Division of Chase Corporation; Fonda Wu, Raytheon Company; and Lamar Young, Specialty Coating Systems Inc.

Receiving Special Recognition Awards for their contribution to the 2020 Technical Conference Program Committee, were Beverly Christian, ABC Electronics Manufacturing Consulting; Martin Goetz, Northrop Grumman Corporation; David Hoover, TTM Technologies; Jason Keeping, Celestica Inc.; Milos Lazić, Indium Corporation; Weifing Liu,

Flex; Sandra Nelle, Atotech Deutschland GmbH; Russell Nowland, Nokia Corporation; Stanton Rak, Continental Automotive Systems; Karl Sauter, Oracle America, Inc.; Julie Silk, Keysight Technologies; Bhanu Sood, NASA Goddard Space Flight Center; and Brian Toleno, Microsoft Corporation; Udo Welzel, Robert Bosch GmbH.

Receiving Special Recognition Awards for their service to the Design Community through the Designer Council Executive Board, were Stephen Chavez, UTC Aerospace Systems; Soo Lan Cheah, Selangor Human Resources Development Center; Michael Creeden, San Diego PCB Design, LLC; Kelly Dack, I-Connect007; Richard Ellinger, Circuit Source; Gary Ferrari, FTG Circuits; Paul Fleming, Integrity Engineering & Design Solutions; Richard Hartley, Rhartley Enterprises; Lucas Hausherr, San Diego PCB Design, LLC; Cherie Litson, Litson1 Consulting; Bob McCreight, Tesla Motors Inc.; Scott McCurdy, Freedom CAD Services Inc.; Andrew Pollack, Surface Mount Circuit Board Association; Thomas Romont, IFTEC; Luis Saracho, Yazaki Service, S. de R.L. de C.V. (YSS); Rainier Taube, Taube Electronic GmbH; Rainier Thueringer, Facherband Elektronik Design e.V.; and Suzy Webb, Design Science.

For their leadership of the 2-17 Connected Factory Initiative Subcommittee that developed IPC-2591, *Connected Factory Exchange (CFX),* Matt Kelly, IBM Corporation; Marc Peo, Heller Industries Inc.; and Jason Spera, Aegis Software, received a Committee Leadership Award. For their contribution to developing IPC-2591, Marybeth Allen, KIC; Paul Austen, Electronic Controls Design Inc.; Ruffin Blackard, CBH Solutions, LLC; Zhiman Chen, Zhuzhou CRRC Times Electric Co., Ltd.; Alexis Fouquet, Europlacer; Symon Franklin, Custom Interconnect Ltd; Michele Gray, Aegis Software; Khoo Yak Hua, ViTrox Technologies Sdn. Bhd.; Eric Huang, HaiNa Cognitive Connections; Vincent Levannier, SYNEO, LLC; Michael Lo, HaiNa Cognitive Connections; Karen McConnell, Northrop Grumman Corporation; Jim Monarchio, TTM Technologies; Hoa Nguyen, OK International; Mark Ogden, ASM Assembly Systems; Pat Ortiz, FlexLink Systems, Inc.; John Perrotta, Europlacer North America; Florian Ritter, ASYS Group; Neaven Seo, Keysight Technologies; Daniel Stran, Aster Technologies; Liu Suzhong, Shenzhen Hengzhiyuan Technology Corporation Ltd; Siew-Siew Wee, Keysight Technologies; Johann Yang, HaiNa Cognitive Connections; and Ben Zhai, Swissmic; received a Special Recognition Award. Receiving Distinguished Committee Service Awards were Michael Ford, Aegis Software; Nicholas Francheteau, Europlacer; Thomas Marktscheffel; ASM Assembly Systems GmbH & Co. KG; Frank Pruefer, iTAC Software AG; Simon Smith, Pillarhouse International, Ltd.; and John Walls, Aegis Software.

For their leadership of D-72 E-Textiles Materials Subcommittee A Team that developed IPC-8921, *Requirements for Woven and Knitted Electronics Textiles (E-textiles) Integrated with Conductive Fibers, Conductive Yarns and/or Wires,* Stephanie Rodgers, Apex Mills, Inc. and Diana Wyman, AATCC; received Committee Leadership Awards. For their contributions to IPC-8921, Ken Araujo, NAMICS Technologies, Inc.; Andy Behr, Panasonic

Industrial Devices Sales Company of America (PIDSA); Daniel Christe, Drexel University; Cedric Cochrane, ENSAIT GEMTEX Lab; Genvieve Dion,Drexel University -Westphal College of Media Arts & Design; Steve Frierson, V Technical Textiles / Shieldex US; Mary Hakam, Woodlands Textiles; Christopher Hunt, Pireta; Augustus Jones, DuPont; Gwo-Tsuen Jou, Taiwan Textile Research Institute; Chuck Kinzel, Liquid Wire Inc.; Matt Kolmes, Volt Smart Yarns; Vladan Koncar, ENSAIT GEMTEX Lab; Jeffrey Lee, iST - Integrated Service Technology; Eric Lewallen, Wearable Electronics Product Development; Chi-hung Lin, Taiwan Textile Research Institute; Weifeng Liu, FLEX; Satosha Maeda, Toyobo; Kalana Marasinghe, MAS Holdings PVT LTD; Riccardo Marchesi, Texe Srl; John Niggle, Pelican Wire Company; Jan Obrzut, NIST; Sigrid Rotzler, IZM (Fraunhofer-Institut für Zuverlässigkeit und Mikrointegration); Haridoss Sarma, GO 2 Scout 4 R&T; Arielle Schock, OTEX; Remington Scott, AATCC; Leslie Thomas, Factory 404 LLC; Xing Tong, SAIC; Eisuke Tsuyuzaki, Yuasa System CO., LTD.; Praneeth Weerasekara, MAS Innovation; and Shahood Zaman, ENSAIT GEMTEX Lab, received Special Recognition Awards. Receiving Distinguished Committee Service Awards were, Zainab Ali, Honda Research & Development, Inc.; Ben Cooper, FLEX; MaryAlice Gill, Jabil Circuit, Inc.; Connie Huffa, Fabdesigns, Inc.; Anjali Khemani, Propel LLC; Birgit Leitner, Propel LLC; Madison Maxey, Loomia; Oona Oksjarvi, Clothing Plus; Bethany Pollack, Pratyush Rai, Nanowear Inc.; Brian Toleno, Microsoft Corporation, Sharon Tracy, Steelcase Inc.; Carole Winterhalter, U.S. Army Combat Capabilities Development Command-Soldier Center.

Receiving Special Recognition Awards for their contributions to D-72 E-Textiles Materials Subcommittee that developed IPC-WP-025, *IPC White Paper on A Framework for the Engineering and Design of E-Textiles,* MaryAlice Gill, Jabil Circuit, Inc.; Birgit Leitner Propel LLC; Madison Maxey, Loomia; Pratyush Rai, Nanowear Inc.; Stephanie Rodgers, Apex Mills, Inc.; and Sharon Tracy, Steelcase Inc.

Receiving a Committee Leadership Award for his contributions to the Technology Solutions that developed IPC-WP-026, *IPC Technology Solutions White Paper on Blockchain and the Electronics Industry: A Review of the Current State of Blockchain Technology and Its Potential Applications in Electronics Manufacturing,* Mike Carano RBP Chemical Technology, Inc. Receiving Special Recognition Awards were Radu Diaconescu, Swissmic; Michael Ford, Aegis Software; Curtis Grosskopf, IBM Corporation; Craig Lax, Septillion Technologies; and Cameron Shearon, Raytheon Company.

For their leadership of IPC D-32 Thermal Stress Test Methodology Subcommittee that developed IPC-TM-650 Method 2.6.7.2C, *Thermal Shock, Thermal Cycle, Continuity and Microsection,* Jim Monarchio, TTM Technologies; Joey Rios, Raytheon Missile Systems; Jerry Magera, Motorola Solutions received Committee Leadership Awards. For their outstanding contributions to IPC-TM-650 Method 2.6.7.2C, Lance Auer, Conductor Analysis Technologies, Inc.; Scott Bowles, Lockheed Martin Space Systems Company; Don Dupriest, Lockheed

Martin Missiles & Fire Control; Tim Estes, Conductor Analysis Technologies, Inc.; Stefan Gerhold, Atotech Deutschland GmbH; Chris Mahanna, Robisan Laboratory, Inc.; and Nick Meeker, Conductor Analysis Technologies, Inc. received Distinguished Committee Service Awards.

For their leadership of Hermes Standard Initiative that developed IPC-HERMES-9852, the *Global Standard for Machine-to-Machine Communication in SMT Assembly,* Florian Ritter, ASYS Group and Thomas Bliem, ASM (Assembly Systems) GmbH & Co. KG received a Committee Leadership Award.

For their leadership of 7-31f IPC WHMA-A-620 Task Group that developed *IPC/WHMA-A-620D, Requirements and Acceptance for Cable and Wire Harness Assemblies,* Bud Bowen, Winchester Interconnect; Catherine Hanlin, Precision Manufacturing Company, Inc.; George Millman, Raytheon Missile Systems; and Richard Rumas, Honeywell Canada, received Committee Leadership Awards. Receiving Special Recognition Awards, were Bob Cooke, NASA Johnson Space Center; Scott Meyer, Collins Aerospace; Garry McGuire, NASA Marshall Space Flight Center; and Debbie Wade, Advanced Rework Technology-A.R.T. Receiving Distinguished Committee Service Awards, were Gerald Bogert, Bechtel Plant Machinery, Inc.; Zhiman Chen, Zhuzhou CRCC Times Electric Co., Ltd.; Symon Franklin, Custom Interconnect Ltd; Ben Gumpert, Lockheed Martin Missile & Fire Control; Tim Hoover, Raytheon Company; Joseph Kane, BAE Systems; and Jonathan Vermillion, Ball Aerospace & Technologies Corp.

For more information on these awards or the award recipients, contact Sandy Gentry, IPC communications director, at +1 847-597-2871.

EIPC SPEeDNEWS

The Weekly On-Line Newsletter from the European Institute of Printed Circuits.
Issue 5 – February 2020

INTERNATIONAL DIARY

2020

KPCA Exhibition
22-24 April
Korea

EIPC @ SMT Hybrid Packaging
5-7 May
Nurnberg, DE

HDP-EIPC Automotive Seminar hosted by Ventec
12-14 May
Frankfurt, DE

JPCA Exhibition
June
Tokyo, Japan

EIPC Summer Conference Örebro, SE
Visit Ericsson 5G Test Centre
16 & 17 June
Örebro, SE

FED Conference
17-18 September
Augsburg, Germany

IPCA Expo
23-25 September
India

TPCA Exhibition
21-23 October
Taipei, Taiwan

EIPC @ Electronica 2020
10-13 November,
München, Germany

ECWC15, WECC World Electronics Circuits Council
30 November-2 December
Shenzhen, China

HKPCA Exhibition
2-4 December
Hong Kong, China