2020

CONNECT.
COLLABORATE.
COMPETE.

March 16-19, 2020 | Exhibits: March 17-18
Fort Worth (TX) Convention Center

Register now at AERODEFEVENT.COM

SPECIAL OFFER INSIDE
SEE PAGE 27
AND
REGISTER TODAY!
WHERE THE AEROSPACE AND DEFENSE INTELLIGENTSIA MEET

DISCOVER NEW SOLUTIONS

200+
Suppliers of dynamic manufacturing technologies and services will be on-site to address your specific challenges and provide you with custom solutions.

TAILOR YOUR EXPERIENCE

125
Technical conference sessions, workshops, local facility tours and complimentary keynotes, panel discussions and exhibit floor presentations to choose from.
Get easy access to the smart technologies and intelligent people propelling aerospace and defense manufacturing at AeroDef 2020, March 16 – 19 in Fort Worth, TX. See what’s coming — and what leading companies are doing to stay competitive — at the industry’s premier conference and exposition, where you’ll find integrated technology solutions from trusted aerospace and defense manufacturing suppliers. You’ll also find innovative manufacturing processes and high-end educational conference sessions that can help make your business vision a reality.

"[AeroDef] is a valuable venue for collaboration and information exchange."

— Mariely “Ely” Brooks, Manager of Manufacturing Technology and Advanced Automation, St. Augustine Aircraft Integration Center of Excellence, Northrop Grumman Aerospace Systems

LEARN FROM THE EXPERTS

140

Industry leaders sharing proven strategies and tactics you can use to advance your business.

CONNECT AND SHARE

2300+

Professionals in attendance who do what you do and want to exchange ideas.

View conference details, speaker bios, schedule, exhibitors and floor plan, and register at aerodefevent.com
AeroDef is produced in partnership with industry OEMs and leading suppliers, who know the challenges manufacturers face as well as the smart technologies needed to support the supply chain.

Dean Bartles, PhD, FSME, FASME  
President and CEO  
National Center for Defense Manufacturing and Machining

Avner Ben-Bassat  
President and CEO  
Plataine Technologies

Bill Bigot  
Vice President of Business Development, Aerospace and Defense  
JR Automation

Jason Bither  
Manager, Advanced Manufacturing S Technology  
Aerospace System Sector  
Northrop Grumman Corporation

Dianne Chong, PhD, FSME  
VP of Assembly, Factory and Support Technologies, Engineering, Operations and Technology (retired)  
The Boeing Company

Matthew Clark  
Security & Manufacturing Support Manager  
Safety Department  
Airbus Group

Leslie Cohen, PhD  
Sr. Vice President, New Business Development & Strategic Technology (retired), HITCO Carbon Composites

Kelly Dodds  
Advanced Manufacturing Tech Director, Advanced Manufacturing, Modernization & Technology, Raytheon Space & Airborne Systems

Raytheon

Dean Hilgenberg  
Director, Manufacturing Engineering & Tooling Global Operations, Northrop Grumman Aerospace Systems

Michael “Mick” Maher  
President  
Maher and Associates LLC

Andrew “Drew” Mallow  
Executive Director, National Center for Advanced Manufacturing  
Louisiana State University
Ralph Resnick, FSME
NCDMM Fellow and Founding Director, America
Makes – the National Additive Manufacturing
Innovation Institute
National Center for Defense Manufacturing
and Machining

John Russell, DSc
Chief Engineer, Manufacturing and Industrial
Technologies Division
Air Force Research Laboratory

Bill Saathoff
Director, Advanced Manufacturing Technology
and Development
Lockheed Martin Aeronautics Company

Todd Szallay
Director, Advanced Manufacturing and
Technology
Aerospace System Sector
Northrop Grumman Corporation

John Vickers
Principal Technologist, Space Technology
Mission Directorate
National Aeronautics and Space Administration

Nicholas Melillo
Technical Director, Composites Manufacturing
Technology Center, Advanced Technology
International (ATI)

Jeffrey Miller, PhD
Senior Technical Fellow, Production
Engineering Commercial Airplanes
The Boeing Company

Ryan Nagle
Integration Manager, Supply Chain Operations
SpaceX

Jose Nogueira-Cabo
Senior Manager, Strategy Department
Airbus Group

Paul Oldroyd
Technical Fellow, Manufacturing and
Engineering Process Development
Bell Helicopter/Textron

Learn more about the Executive Committee members and register at aerodefevent.com
**EVENT AGENDA**

**Monday, March 16**

<table>
<thead>
<tr>
<th>Registration</th>
<th>8:00 AM - 4:00 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>++ Additive Manufacturing Fundamental Certificate Course &amp; Exam</td>
<td>8:00 AM - 5:00 PM</td>
</tr>
<tr>
<td>++ Pre-Conference Workshops</td>
<td>9:00 AM – 12:00 PM</td>
</tr>
<tr>
<td></td>
<td>Automation is a Journey - Robotics, Industry 4.0, Factory of the future, Where should I even Start?</td>
</tr>
<tr>
<td></td>
<td>Metal Additive Manufacturing, Robust Development and Implementation for Competitive Advantages</td>
</tr>
<tr>
<td>++ Bell Headquarters Tour</td>
<td>1:00 PM – 4:00 PM</td>
</tr>
<tr>
<td>++ Pre-Conference Workshops</td>
<td>1:00 PM – 4:00 PM</td>
</tr>
<tr>
<td></td>
<td>Aerospace Coatings &amp; Corrosion Control: Materials &amp; Applications</td>
</tr>
<tr>
<td></td>
<td>Analytics for Automation</td>
</tr>
<tr>
<td></td>
<td>Additive Manufacturing for Aerospace Spares and Repairs</td>
</tr>
</tbody>
</table>

Complimentary Early Arrival Reception for Conference Attendees & Exhibitors
6:00 PM – 7:30 PM

**Tuesday, March 17**

<table>
<thead>
<tr>
<th>Registration</th>
<th>7:00 AM – 4:30 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Composites Manufacturing Awards</td>
<td>8:00 AM – 8:20 AM</td>
</tr>
<tr>
<td>✓ Keynote: Continuous Innovation &amp; Development of the F-35 Program</td>
<td>8:20 AM – 9:00 AM</td>
</tr>
<tr>
<td></td>
<td>Greg Ulmer, VP and General Manager F-35 Program, Lockheed Martin Aeronautics Company</td>
</tr>
<tr>
<td>✓ Panel Discussion: Next-Generation Automation for Aerospace Composites</td>
<td>9:00 AM – 10:00 AM</td>
</tr>
<tr>
<td></td>
<td>Moderator: John Russell, DSc, AFRL</td>
</tr>
<tr>
<td>✓ Exhibits Open, featuring Aerofied Preferred Supplier Pavilion</td>
<td>10:00 AM – 5:30 PM</td>
</tr>
<tr>
<td>✓ Conference Technical Sessions:</td>
<td>10:20 AM – 12:00 PM</td>
</tr>
<tr>
<td></td>
<td>• Dimensional Management Methods</td>
</tr>
<tr>
<td></td>
<td>• Augmented Reality and AI</td>
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<tr>
<td></td>
<td>• Metal Additive Manufacturing</td>
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<tr>
<td></td>
<td>• Automated Systems for Aerospace</td>
</tr>
<tr>
<td></td>
<td>• Advanced Manufacturing</td>
</tr>
<tr>
<td>✓ Career Development Forum</td>
<td>11:15 AM – 12:50 PM</td>
</tr>
<tr>
<td>✓ Featured Presentation: Bond It...Don’t Bolt It! Challenges &amp; Opportunities for Structural Bonding</td>
<td>1:00 PM – 1:50 PM</td>
</tr>
<tr>
<td></td>
<td>Doug Decker, President The Composites Consultants &amp; Brietta Oakley, Material and Process Engineer Lockheed Martin Aeronautics Company</td>
</tr>
<tr>
<td>✓ SME’s Research &amp; Development Speed Presentation Challenge</td>
<td>2:00PM – 3:30 PM</td>
</tr>
<tr>
<td>✓ Technical Conference Sessions:</td>
<td>2:00 PM – 4:10 PM</td>
</tr>
<tr>
<td></td>
<td>• Automated Composites Manufacturing I</td>
</tr>
<tr>
<td></td>
<td>• Advanced Inspection Technologies</td>
</tr>
<tr>
<td></td>
<td>• Air Force ManTech Program</td>
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<tr>
<td></td>
<td>• Next Generation Additive Manufacturing</td>
</tr>
<tr>
<td></td>
<td>• Automation &amp; Robotics I</td>
</tr>
<tr>
<td>✓ Welcome Reception on the Exhibit Floor</td>
<td>4:00 PM – 5:30 PM</td>
</tr>
<tr>
<td>✓ AeroDef Roundup at Billy Bob’s Texas</td>
<td>6:30 PM – 9:00 PM</td>
</tr>
</tbody>
</table>

**Wednesday, March 18**

<table>
<thead>
<tr>
<th>Registration</th>
<th>7:00 AM – 4:30 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ SME’s Research &amp; Development Speed Presentation Challenge Awards</td>
<td>8:00 AM – 8:20 AM</td>
</tr>
<tr>
<td>✓ Keynote: Composites, Automation &amp; Data in Aerospace Manufacturing</td>
<td>8:20 AM – 9:00 AM</td>
</tr>
<tr>
<td></td>
<td>Gerould Young, Director Materials &amp; Manufacturing Technology Boeing Research &amp; Technology</td>
</tr>
<tr>
<td>✓ Panel Discussion: Industry 4.0 for Aerospace Manufacturing in 2020: Impact, Challenges and Best Practices</td>
<td>9:00 AM – 10:00 AM</td>
</tr>
<tr>
<td></td>
<td>Moderator: Avner Ben-Bassat, President &amp; CEO, Plataine Ltd.</td>
</tr>
<tr>
<td>✓ Exhibits Open, featuring Aerofied Preferred Supplier Pavilion</td>
<td>10:00 AM – 5:30 PM</td>
</tr>
<tr>
<td>✓ Conference Technical Sessions:</td>
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<td></td>
<td>• Next Generation Additive Manufacturing</td>
</tr>
<tr>
<td></td>
<td>• Automation &amp; Robotics I</td>
</tr>
<tr>
<td>✓ Featured Presentation: Cybersecurity Maturity Model Certification</td>
<td>1:00 PM – 1:50 PM</td>
</tr>
<tr>
<td></td>
<td>Katie Arrington, Chief Information Security Officer for Acquisition, Office of the Under Secretary of Defense for Acquisition and Sustainment, OUSD (A&amp;S)</td>
</tr>
<tr>
<td>✓ Technical Conference Sessions:</td>
<td>2:00 PM – 4:10 PM</td>
</tr>
<tr>
<td></td>
<td>• Automated Composites Manufacturing II</td>
</tr>
<tr>
<td></td>
<td>• Precision Machining</td>
</tr>
<tr>
<td></td>
<td>• Smart Manufacturing for Industry 4.0 I</td>
</tr>
<tr>
<td></td>
<td>• Large Scale Additive Manufacturing</td>
</tr>
<tr>
<td></td>
<td>• Automation &amp; Assembly</td>
</tr>
<tr>
<td>✓ Networking Reception: The Deck at the SME ZONE</td>
<td>4:00 PM – 5:30 PM</td>
</tr>
</tbody>
</table>
DOWNLOAD THE MOBILE APP

Build your schedule and make connections as you prepare for your visit to AeroDef. You’ll find an interactive floor plan, exhibitor details, speaker bios and more!

Download on the
App Store
Get it on
Google Play

Thursday, March 19

Registration
7:30 AM – 12:00 PM

Conference Technical Sessions:
8:15 AM – 9:50 AM
- Quality & Inspection of Composites
- Advanced Additive Manufacturing
- Digitizing the Smart Factory
- Design Considerations for AM

Conference Technical Sessions:
10:05 AM – 11:40 AM
- Composite Processes & Materials
- AM in Process Inspection
- Smart Manufacturing for Industry 4.0 II
- Cybersecurity & Cyberphysical

Tour: Lockheed Martin Aeronautics Facility, Fort Worth
1:00 PM – 4:00 PM

☑ Included with your Exhibits Registration
+ Additional Registration Fee Required

Find the complete up-to-date schedule and register at aerodefevent.com

Visit aerodefevent.com/app to learn more.
Continuous Innovation & Development of the F-35 Program
Sponsored by: JR Automation
Tuesday, March 17 | 8:20 AM – 9:00 AM
Hear Greg Ulmer, Vice President and General Manager, F-35 Lightning II Program, discuss the progress of the ongoing ramp up to rate production, the continuous improvements in affordability and leveraging the digital transformation throughout the program.

Gregory M. Ulmer
Vice President and General Manager
F-35 Program
Lockheed Martin Aeronautics Company

Composites, Automation & Data in Aerospace Manufacturing
Wednesday, March 18 | 8:20 AM – 9:00 AM
Composites have delivered improved performance and cost reductions for aerospace products. Now, higher rates push us towards more automated composite fabrication & large part assembly. Both require process control, in situ measurement and data systems to achieve rate, quality and safety in our factories. This presentation will highlight some of the solutions to challenges we face.

Gerould Young
Senior Director Advanced Materials & Manufacturing
Boeing Commercial Airplanes
Panel Discussions

Next-Generation Automation for Aerospace Composites
Tuesday, March 17 | 9:00 AM – 10:00 AM

It is estimated by both Boeing and Airbus that around 40,000 commercial aircraft will be required over the next twenty years. In addition, the US military is researching concepts of swarms of unmanned systems (UAVs) with limited life (or even disposable) and very low cost. Finally, the Air Taxi concept is no longer a 40 year old dream of a flying car. A state change must happen if the aerospace industry is to achieve production rates for these future aircraft. Automation of composites is going to be a major component to enable this next generation of aircraft. This panel will explore the possibilities in automation that can provide solutions to the aerospace industrial base.

Panelist:
Bob Koon
LM Fellow in Materials and Processes
Lockheed Martin Aeronautics Company

Anoush Poursartip, PhD, P. Eng.
FCAE Director, Composites Research Network
Professor, Department of Materials Engineering
The University of British Columbia and
Director of Research

Robert Harper
Director of Technical Sales & Market
Development
Fives Machining Systems Inc.

Waruna Seneviratne, PhD
Director – ATLAS
Sr. Research Scientist – Composites & Structures
National Institute for Aviation Research (NIAR)

Panel Discussions

Industry 4.0 for Aerospace Manufacturing in 2020: Impact, Challenges, and Best Practices
Wednesday, March 18 | 9:00 AM – 10:00 AM

The application of Industry 4.0 technologies and concepts in aerospace manufacturing has taken off in numerous directions, as the industry’s leading OEMs and suppliers seek to leverage the massive range of opportunities it presents. This expert panel will seek to explore how the 4th industrial revolution is currently applied to and impacts aerospace manufacturing, at all levels of the supply chain. This session will include discussion of the business problems already addressed today with these new capabilities, the outcomes achieved, the challenges in user adoption, best practices and lessons learned.

Moderator:
Avner Ben-Bassat
President & CEO
Plataine Ltd.

Panelist:
Don Kinard, PhD
Senior Technical Fellow, F-35 Production
Lockheed Martin Aeronautics Company

Shachar Fine
EVP, Business Development, Marketing & Sales
Kanfit Ltd.

Robert Yancey, PhD
Business Development Director
Hexcel
ADDITIVE FUNDAMENTALS REVIEW
PROGRAM AND EXAM

Additive Manufacturing Fundamentals is a half-day review and half-day exam. The prep course is a discussion-oriented and interactive session, in which participants receive comprehensive introductory knowledge of the 3D printing industry. Covering terms and definitions, software and hardware, as well as discussing applications and case studies. You will begin to understand the benefits of 3D printing in a way that is relevant to your business needs.

OBJECTIVES:
- Identify the various 3D printing technologies & their benefits/limitations
- Define the basic 3D printing process
- Understand the hardware & software for 3D printing technology
- Describe integration of 3D printing with secondary manufacturing processes (e.g. casting & molding)
- Identify basic safety & quality considerations for 3D printing

EXAM & REVIEW PROGRAM COST
$495 per person

Additive Manufacturing Fundamentals exam consists of 110 multiple choice questions. Three hours are allowed for completion of the open book/note exam.

TOURS

Visit local manufacturing facilities to see how they meet the needs of the aerospace and defense manufacturing industry.

GUIDELINES:
- Space is limited
- Must register by February 17, 2020
- On-site registration will not be accepted
- You must be a U.S. citizen to attend
- Government-issued photo ID is required
- Attendance is subject to final approval by the host facility
- No cameras, videos, note-taking, sketching, texting or phone use of any kind
- No luggage, backpacks, bags, etc. allowed
- Closed toe shoes only; no high heels
- Thursday Only: Lunch Available 11:30 AM - 12:00 PM

Monday, March 16 | 1:00 PM – 4:00 PM
Thinking above and beyond is what we do. For more than 80 years, we’ve been reimagining the experience of flight – and where it can take us. Above all, our breakthrough innovations deliver exceptional experiences to our customers. Efficiently. Reliably. And always, with safety at the forefront. This tour will feature stops at Bell’s Headquarters.

Thursday, March 19 | 12:00 PM – 4:00 PM
The Fort Worth Lockheed Martin Aeronautics Facility produces F-16 and F-35 Aircraft for US and International Partners. The assembly building is over a mile long and has been producing military aircraft since WWII starting with the B-24 Liberator and including the B-36 Peacemaker, the B-58 Hustler, the F-111 Aardvark, F-16s and now the F-35 fifth generation fighter. The focus of the tour will be the F-35 assembly line highlighting flow to takt lean manufacturing, material flow, and advanced manufacturing implementations.

Find additional workshop and tour details and register at aerodefevent.com
Immerse yourself in innovative processes, materials and best practices for aerospace and defense manufacturing. These workshops serve as an excellent introduction to the exhibit floor and the conference technical sessions, which start the following day.

**Metal Additive Manufacturing, Robust Development and Implementation for Competitive Advantages**

9:00 AM – 12:00 PM
- Understand AM process control and achieve Qualified Metallurgical Process in AM production
- Take advantages of AM process and apply it to mission critical applications
- Evaluate and select the most fit AM processes for productions

**Automation is a Journey - Robotics, Industry 4.0, Factory of the Future: Where should I even start?**

9:00 AM – 12:00 PM
- Understand what considerations should be made when implementing cutting edge technology into the manufacturing environment.
- Get an introduction on a systematic process to use when evaluating technologies.
- Learn how some applications have been used in manufacturing environments

**Aerospace Coatings & Corrosion Control: Materials & Applications**

1:00 PM – 4:00 PM
- Learn the availability of novel technologies that can extend the functionality, performance and durability of manufactured parts and assembly
- Develop in-depth knowledge of materials functionality, tolerance levels and safeguarding techniques
- Develop rationale and justification for selecting materials for specific functionality, properties and costs

**Additive Manufacturing for Aerospace Spares and Repairs**

1:00 PM – 4:00 PM
- Develop a basic understanding of the AM technologies currently available for manufacturing of aircraft spares and repairs
- Learn about the drawbacks, limitations, advantages, key characteristics, and design parameters to consider when determining the right AM technology for your spare or repair application
- Learn about real applications of the technologies discussed
Connect with more than 100 of the technical specialists who are leading the evolution of manufacturing.

The AeroDef Manufacturing Conference Advisory Committee is comprised of aerospace and defense manufacturing professionals who know what it takes to accelerate adoption of new technologies, implement the solutions and achieve the desired outcomes. These advisors guide the conference development and assist with identifying relevant session topics and selecting speakers and presentations that will deliver the greatest impact to you and your colleagues.

AeroDef Manufacturing Advisors

- **Eric Barnes**  
  Northrop Grumman Fellow  
  Aerospace System Sector  
  Northrop Grumman Corporation

- **Bill Bigot**  
  Vice President of Business Development, Aerospace and Defense  
  JR Automation

- **Dan Braley**  
  Boeing Associate Technical Fellow  
  Boeing Global Services

- **George “Nick” Bullen**  
  Technical Fellow, Advanced Automation and Global Manufacturing  
  Northrop Grumman Corporation

- **Doug Decker**  
  President  
  The Composites Consultants

- **Jim Fisher**  
  Executive Director, Advanced Manufacturing  
  National Center for Defense Manufacturing and Machining (NCDMM)

- **Youping Gao, PhD**  
  President  
  Castheon Inc.

- **Don Kinard, PhD**  
  Senior Technical Fellow; Deputy, F-35 Fighter Production System  
  Lockheed Martin Aeronautics Company

- **James “Luke” McHale**  
  Senior Manager, Manufacturing Technology  
  Lockheed Martin Aeronautics Company

- **Steve Parsons**  
  Fellow  
  Lockheed Martin Aeronautics Company

- **Dan Sanders**  
  Senior Technical Fellow  
  Boeing Research & Technology

- **Tara Thomasson**  
  Lockheed Martin Fellow  
  Lockheed Martin Aeronautics Company

- **John Wang**  
  Engineering Manager, Systems Verification Center  
  Raytheon
THE TECHNICAL AUTHORITIES

Composites Manufacturing Advisors

Vernon Benson
Technical Fellow, Composite Automation
Northrop Grumman Innovation Systems

David Dickson
Associate Technical Fellow
The Boeing Company (Retired)

Louis Dorworth
Manager, Direct Services Division
Abaris Training Resources Inc.

Carroll Grant
Consultant
Aerospace Composites Consulting

Robert Harper
Director of Technical Sales & Market Development
Fives Machining Systems Inc.

Randy Kapesser
Strategic Leader, New Product Introduction Value Stream
GE Aviation

Richard Lofland
President
Richard Lofland & Associates

Timothy Luchini, PhD
Integrated Product Team Manager
The Boeing Company

Robert Pickell, Jr.
Senior Manufacturing & Process Engineer, Materials & Manufacturing Technology Group
Boeing Research & Technology

Jarrod Ridge
Vice President – Growth
AdamWorks

Robin Zwick
Manufacturing Engineer
The Boeing Company
WHAT DO YOUR PEERS HAVE TO SAY ABOUT AERODEF?

More than 12,000 aerospace and defense manufacturing professionals have attended AeroDef Manufacturing since it launched in 2011. Here are just some of the comments they shared about their experiences at AeroDef in Long Beach.

“The companies and conference format were great.”

“The overall content was valuable for networking and learning and there was a good balance of designers to manufacturers and their suppliers present.”

“A good mix of suppliers in the show.”

“I liked how there was a diverse range of industries, technologies, and professionals that were present during this event. I feel everything about it was interesting and fun.”

“All the right people come together at the same place.”

“Excellent opportunity to network.”

“Very useful, practical applications of manufacturing advances and research.”

Browse conference sessions, view advisor and speaker bios, and register at aerodefevent.com
### Conference Tracks

The AeroDef Manufacturing Conference addresses your most pressing challenges. The conference is organized into six tracks that offer you the opportunity to meet face-to-face with engineers, product designers and managers to learn practical solutions you can take with you and implement back at the office or on the shop floor.

<table>
<thead>
<tr>
<th>Conference Tracks</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additive Manufacturing / 3D Printing</td>
<td>The latest equipment, materials and services in additive manufacturing and the processes that make them possible.</td>
</tr>
<tr>
<td>Advanced Manufacturing Enterprise</td>
<td>Advanced inspection, quality control, validation methods, and equipment for mission-critical operations. Using advanced manufacturing technologies and processes that feature complex surfaces, thin walls and challenging part geometries.</td>
</tr>
<tr>
<td>Air Force Research Laboratory ManTech Update</td>
<td>Highlight current AFRL ManTech initiatives and programs.</td>
</tr>
<tr>
<td>Automation, Assembly &amp; Robotics</td>
<td>Advanced techniques for automated manufacturing, robotics and assembly that enable commercial and defense aerospace suppliers to meet stringent cost targets, quality requirements and time constraints for increased production.</td>
</tr>
<tr>
<td>Composites Manufacturing &amp; Advanced Materials</td>
<td>The latest developments in composites manufacturing and the high-performance materials and processes that make them possible for commercial and military aircraft.</td>
</tr>
<tr>
<td>Smart Manufacturing / Industry 4.0</td>
<td>The use of internet connections to monitor production and identify opportunities for automating operations using data analytics, simulation and virtual environments to improve performance and aid in the design for manufacturing and assembly.</td>
</tr>
</tbody>
</table>

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### Your Full Conference Pass Includes:

- All 3 days of conference presentations
- Lunch on Tuesday and Wednesday
- Full conference proceedings (online access)
- Industry-focused keynote presentations and panel discussions
- Access to the exhibits and all exhibit floor activities
- All networking receptions

---

“**I liked that there were several receptions where we could mingle around and talk to [people] in a more relaxed atmosphere.**”

“**My first visit and it was impressive!**”

See who attends AeroDef and register at aerodefevent.com
## Conference Schedule

### Tuesday, March 17

- **7:00 AM - 4:30 PM**  
  Registration

- **8:00 - 8:20 AM**  
  Composites Awards & SME Award of Merit Presentation | The Deck at the SME ZONE

- **8:20 - 9:00 AM**  
  Keynote: Continuous Innovation & Development of the F-35 Program | Greg Ulmer, Lockheed Martin Aeronautics Company | The Deck at the SME ZONE  
  Sponsored by

- **9:00 - 10:00 AM**  
  Panel Discussion: Next-Generation Automation for Aerospace Composites | The Deck at the SME ZONE

### Exhibits

- **Open 10:00 AM | Close 5:30 PM**

### Technical Sessions

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Presenter(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 AM</td>
<td>Optimization of Automated Trim for Carbon Fiber Preforms</td>
<td>Jared Townsend &amp; Bobby Chambers, GKN Aerospace Engine Systems</td>
</tr>
<tr>
<td>10:20 AM</td>
<td>Keynote: Continuous Innovation &amp; Development of the F-35 Program</td>
<td>Greg Ulmer, Lockheed Martin Aeronautics Company</td>
</tr>
<tr>
<td>10:40 AM</td>
<td>Non-Contact Metrology for F-35 Verification</td>
<td>Milana Sign-Bravo, Chris Barrow &amp; Devin Grand, Lockheed Martin Aeronautics Company</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>Dimensional Management Methods, Processing Technology for Engine Nacelle Acoustic Panels</td>
<td>Tim O’Dey, Royal Engineered Composites</td>
</tr>
<tr>
<td>11:20 AM</td>
<td>Three-Dimensional Shop-Floor Inspection to Improve Yield and Profitability</td>
<td>Erik Novak, PhD, 4D Technology &amp; Kramer Lindell, Nanometrics</td>
</tr>
<tr>
<td>11:40 AM</td>
<td>Critical Factors of Abrasive Materials for Surface Preparation and Repairs</td>
<td>Brooke Campbell, BTG Labs</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>Automated Deposition of Disparate Materials in Composite Structures Using FPP</td>
<td>John Metilli, Composites Automations LLC</td>
</tr>
<tr>
<td>12:20 PM</td>
<td>How Innovative Hybrid Metrology Manufacturing Cells Make the Leap Forward into the Everyday Aerospace Manufacturing Process</td>
<td>Scott Everling, Hexagon Manufacturing Intelligence</td>
</tr>
<tr>
<td>12:40 PM</td>
<td>How Augmented Reality is Transforming Lockheed Martin’s Manufacturing Process</td>
<td>David Nedohin, Scope AR &amp; Shelley Peterson, Lockheed Martin Space</td>
</tr>
<tr>
<td>1:00 PM</td>
<td>Flying High with AI: A Rolls Royce Case Study</td>
<td>Rick Oppedisano, Delta Bravo Artificial Intelligence</td>
</tr>
<tr>
<td>1:20 PM</td>
<td>WHAMS: The Wireless Test Solution for Electrical Harness Testing</td>
<td>Samuel Franklin IV, Lockheed Martin Aeronautics Company</td>
</tr>
<tr>
<td>1:40 PM</td>
<td>Low-Cost Attritable Aircraft Technologies</td>
<td>Craig Nelson, AFRL Manufacturing &amp; Industrial Technologies Division</td>
</tr>
<tr>
<td>2:00 PM</td>
<td>Automated Layup of High-Temperature Thermoplastic</td>
<td>Samoil Samak, Mikrosam</td>
</tr>
<tr>
<td>2:20 PM</td>
<td>All-Purpose Foreign Object Debris Detection and Retrieval Device</td>
<td>Jonathan Olson, Lockheed Martin Aeronautics Company</td>
</tr>
<tr>
<td>2:40 PM</td>
<td>Three-Dimensional Shop-Floor Inspection to Improve Yield and Profitability</td>
<td>Erik Novak, PhD, 4D Technology &amp; Kramer Lindell, Nanometrics</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>Three-Dimensional Shop-Floor Inspection to Improve Yield and Profitability</td>
<td>Erik Novak, PhD, 4D Technology &amp; Kramer Lindell, Nanometrics</td>
</tr>
<tr>
<td>3:20 PM</td>
<td>Critical Factors of Abrasive Materials for Surface Preparation and Repairs</td>
<td>Brooke Campbell, BTG Labs</td>
</tr>
<tr>
<td>3:40 PM</td>
<td>How Innovative Hybrid Metrology Manufacturing Cells Make the Leap Forward into the Everyday Aerospace Manufacturing Process</td>
<td>Scott Everling, Hexagon Manufacturing Intelligence</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>Air Force ManTech Robotics</td>
<td>Nihad Alfaysale, AFRL Manufacturing and Industrial Technologies Division</td>
</tr>
<tr>
<td>4:20 PM</td>
<td>Air Force ManTech Digital Engineering</td>
<td>Brench Boden, AFRL Manufacturing and Industrial Technologies Division</td>
</tr>
<tr>
<td>4:40 PM</td>
<td>Welcome Reception on the Exhibit Floor</td>
<td>Billy Bob’s Texas (Transportation provided from/to the convention center)</td>
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</tbody>
</table>

View conference details, speaker bios, schedule, exhibitors and floor plan, and register at aerodefevent.com
<table>
<thead>
<tr>
<th>Sponsored by</th>
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<tbody>
<tr>
<td>Metal Additive Manufacturing</td>
<td>Automated Systems for Aerospace</td>
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<tr>
<td><strong>Evaluation of a Low-Cost Material Extrusion Printer for Investment Casting Applications</strong>&lt;br&gt;Thomas Mueller&lt;br&gt;Mueller Additive Manufacturing Solutions</td>
<td><strong>Agile Robotics  Leveraging Open-Source Tools for Aerospace Applications</strong>&lt;br&gt;Michael Ripperger&lt;br&gt;Southwest Research Institute</td>
</tr>
<tr>
<td><strong>Increasing Productivity for AM Production</strong>&lt;br&gt;Michael Wais&lt;br&gt;SLM Solutions</td>
<td><strong>Smart Automation Solutions for Aerospace</strong>&lt;br&gt;Karl “Rick” Schultz&lt;br&gt;FANUC</td>
</tr>
<tr>
<td><strong>Volumetric 3D Printing</strong>&lt;br&gt;Daniel Clark&lt;br&gt;T3DP</td>
<td><strong>Transitioning State-of-the-Art Production Technologies to Sustainment</strong>&lt;br&gt;Jonathan Olson&lt;br&gt;Lockheed Martin Aeronautics Company</td>
</tr>
<tr>
<td><strong>Next-Generation Additive Manufacturing</strong></td>
<td><strong>Automation &amp; Robotics 1</strong></td>
</tr>
<tr>
<td><strong>Comparison of Additively Manufactured Printed Conductors Versus Traditional Wire Bonding in RF Circuitry</strong>&lt;br&gt;Veena Peddi&lt;br&gt;ACI Technologies</td>
<td><strong>Automated Installation of Fastner Fill Material</strong>&lt;br&gt;Curtis Lemieux&lt;br&gt;Lockheed Martin Aeronautics Company</td>
</tr>
<tr>
<td><strong>Functionally Gradient Materials (FGM): The What, How and Why?</strong>&lt;br&gt;Melanie Lang&lt;br&gt;FormAlloy</td>
<td><strong>Next Step on Productivity: Automation Beyond the Machine Tending</strong>&lt;br&gt;Topi Judén&lt;br&gt;Fastems</td>
</tr>
<tr>
<td><strong>How Additive Manufacturing Enables Hybrid Manufacturing</strong>&lt;br&gt;Jason Jones, PhD&lt;br&gt;Hybrid Manufacturing Technologies</td>
<td><strong>Implementation of a Mobile Robotic Drilling Application</strong>&lt;br&gt;Will Wilder&lt;br&gt;Wilder Systems LLC</td>
</tr>
<tr>
<td><strong>Geometrically Self-Regulating Robotic Additive Manufacturing with Laser Material Deposition</strong>&lt;br&gt;Jan Bremer&lt;br&gt;Fraunhofer Institute for Laser Technology</td>
<td><strong>Mobile Robot Strategies for the Automation of Large and Heavy Parts</strong>&lt;br&gt;Denise Ebenhoech&lt;br&gt;KUKA Robotics</td>
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### CONFERENCE SCHEDULE

#### WEDNESDAY

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:00 AM-4:30 PM</td>
<td>Registration</td>
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<tr>
<td>8:00-8:20 AM</td>
<td>SME’s Research &amp; Development Speed Presentation Challenge Awards</td>
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<tr>
<td></td>
<td>The Deck at SME ZONE</td>
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<tr>
<td>8:20-9:00 AM</td>
<td>Keynote: Composites, Automation &amp; Data in Aerospace Manufacturing</td>
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<tr>
<td></td>
<td>Gerould Young, Boeing Commercial Airplanes</td>
</tr>
<tr>
<td>9:00-10:00 AM</td>
<td>Panel Discussion: Industry 4.0 for Aerospace Manufacturing in 2020: Impact, Challenges and Best Practices</td>
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<td></td>
<td>The Deck at the SME ZONE</td>
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<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>10:20-10:45 AM</td>
<td>Challenges and Rewards: Pushing The Envelope on Large Bonded Structures</td>
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<tr>
<td></td>
<td>Moderated by: Doug Decker, The Composites Consultants Panelists</td>
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<tr>
<td></td>
<td>Giles Dillingham, BTG, Misha Grigoriev, Northrop Grumman</td>
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<td></td>
<td>Kay Blohowiak, The Boeing Company, Brietta Oakley, Lockheed Martin</td>
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<td></td>
<td>Aeronautics Company</td>
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<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>10:55-11:20 AM</td>
<td>3D Printing of High-Performance Refractory Alloys for Missile and Space Applications</td>
</tr>
<tr>
<td></td>
<td>Youping Gao, PhD</td>
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<td></td>
<td>Castheon Inc.</td>
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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>11:30-11:55 AM</td>
<td>Overcoming Industry 4.0 Inspection Challenges: Quality Control on the Floor</td>
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<tr>
<td></td>
<td>Nicholas Rady, Creaform</td>
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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>12:15-2:00 PM</td>
<td>Lunch Break/Visit the Exhibits</td>
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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>2:00-2:25 PM</td>
<td>Flexible AFP Systems Supporting Tier 1 &amp; Tier 2 Suppliers</td>
</tr>
<tr>
<td></td>
<td>Kris Czaja, Ingersol</td>
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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>2:35-3:00 PM</td>
<td>Affordable Manufacturing for Small Turbine Engine Components</td>
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<td></td>
<td>Robert Wittman, Air Force Research Laboratory</td>
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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>3:10-3:35 PM</td>
<td>Laser Micro-Machining in Aerospace</td>
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<tr>
<td></td>
<td>Jon Carlson, GF Machining Solutions</td>
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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>3:45-4:10 PM</td>
<td>Grinding Innovations for Aerospace Manufacturing</td>
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<tr>
<td></td>
<td>K. Phillip Varhese, Saint-Gobain Abrasives</td>
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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>4:00-5:30 PM</td>
<td>Networking Reception</td>
</tr>
<tr>
<td></td>
<td>The Deck at the SME ZONE</td>
</tr>
<tr>
<td>Applications for Additive Manufacturing</td>
<td>Automation &amp; Robotics II</td>
</tr>
<tr>
<td>----------------------------------------</td>
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</tr>
<tr>
<td><strong>Applications of Additive Manufacturing for Aerospace Spares and Repairs</strong>&lt;br&gt;Dan Braley&lt;br&gt;Boeing Global Services</td>
<td><strong>Industrial or Collaborative Robots for Your Surface Preparation and Finishing Applications</strong>&lt;br&gt;Michael Haas&lt;br&gt;FerRobotics Inc.</td>
</tr>
<tr>
<td><strong>New Ideas on Geometry and Data Representations to Unlock the Full Potential of Additive Manufacturing</strong>&lt;br&gt;Jonathan Harris, PhD&lt;br&gt;nTopology Inc.</td>
<td><strong>Collaborative Robots: Future of Robotics and Automation</strong>&lt;br&gt;Bandara Gamini, PhD&lt;br&gt;University of Wisconsin</td>
</tr>
<tr>
<td><strong>Ultem 9085 FLCS Canopy Trainer</strong>&lt;br&gt;Josh Simans&lt;br&gt;Lockheed Martin Aeronautics Company</td>
<td><strong>Factory of the Future Linear Robot Design Considerations</strong>&lt;br&gt;Richard Vaughn&lt;br&gt;Bosch Rexroth</td>
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<tr>
<th>Large-Scale Additive Manufacturing</th>
<th>Automation &amp; Assembly</th>
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<tbody>
<tr>
<td><strong>Defect Mitigation and Process Adjustment in Large-Scale Additive Manufacturing via Laser Profilometer and Thermal Camera</strong>&lt;br&gt;Michael Borish, PhD&lt;br&gt;Oak Ridge National Lab</td>
<td><strong>Success in Factory Automation via Careful Requirements Gathering</strong>&lt;br&gt;John Rokus&lt;br&gt;JR Automation</td>
</tr>
<tr>
<td><strong>Large-Format Additive Manufacturing Opportunities in Aerospace Tooling</strong>&lt;br&gt;Sean Henson&lt;br&gt;Ascent Aerospace</td>
<td><strong>Universal Metrology Automation: Streamline Intelligent Quality Control</strong>&lt;br&gt;Paul Oberle, 3D Infotech Inc. &amp; Ethan Torres, Lockheed Martin Aeronautics Company</td>
</tr>
<tr>
<td><strong>Large-Scale Metal Additive Manufacturing: Processes, Maturation, Qualification and Challenges</strong>&lt;br&gt;Yashwanth Kumar Bandari, PhD &amp; Alex Kitt&lt;br&gt;Edison Welding Insitutute</td>
<td><strong>Advancements in Laser Pattern Welding Utilizing Integrated Shape Recognition and Beam Positioning</strong>&lt;br&gt;Jason Woolley&lt;br&gt;Abicor Binzel</td>
</tr>
<tr>
<td><strong>Opportunities and Challenges Using Metal Big-Area Additive Manufacturing</strong>&lt;br&gt;Andrezej Nycz, PhD&lt;br&gt;Oak Ridge National Laboratory</td>
<td><strong>Automated Blind Fastner Surface Preparation and Knitting Development</strong>&lt;br&gt;Michael Chau&lt;br&gt;Lockheed Martin Aeronautics Company</td>
</tr>
</tbody>
</table>
## CONFERENCE SCHEDULE

### Thursday, March 19

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 AM-12:00 PM</td>
<td>Registration</td>
<td>Sponsored by SLM Solutions</td>
</tr>
<tr>
<td>8:15-8:40 AM</td>
<td><strong>Technical Sessions</strong></td>
<td><strong>Quality &amp; Inspection of Composites</strong></td>
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<tr>
<td></td>
<td>Leveraging Automatic Inspection of Composites</td>
<td>Scott Blake, Aligned Vision</td>
</tr>
<tr>
<td></td>
<td>Fabrication: A Holistic Approach to Quality</td>
<td>Additive + Subtractive Manufacturing: “Art to Part”</td>
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<td>Jon Carlson, 6F Machining Solution</td>
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<td>Smart Factory: Optimizing Outcomes by Digitizing Factory Operations</td>
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<td>Chris Chapin, DXC Technology</td>
</tr>
<tr>
<td>8:50-9:15 AM</td>
<td><strong>Technical Sessions</strong></td>
<td><strong>Advanced Additive Manufacturing</strong></td>
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<tr>
<td></td>
<td>Modular Stress-Strain Mechanical Loading</td>
<td>Malcolm Prouty, PhD, SMRC, C.Y. Ingham, SMRC &amp; Richard Osterman, Material &amp; Process Solutions LLC</td>
</tr>
<tr>
<td></td>
<td>System to Assess Aerospace Material</td>
<td>Additive for Aerospace: Increase Uptime and Build for the Future, Today</td>
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<tr>
<td></td>
<td>Performance</td>
<td>Tony Higgins, Markforged</td>
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<td></td>
<td>Is Real-Time Improvement Disrupting Continuous Improvement?</td>
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<td>Carlos Chavez, Crean Innovations</td>
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<tr>
<td>9:25-9:50 AM</td>
<td><strong>Technical Sessions</strong></td>
<td><strong>Composite Processes &amp; Materials</strong></td>
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<tr>
<td></td>
<td>Automated and Semi-Automated PAUT</td>
<td>Scott Stanley, Innerspec Technologies</td>
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<tr>
<td></td>
<td>Inspection of Composites</td>
<td>3D Printing of Fiber-Reinforced Polymers at High Resolution</td>
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<td>Josh Martin, PhD, Fortify</td>
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<td>Lessons from Deploying Predictive Analytics on the Manufacturing Shop Floor</td>
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<td>Alex Romriell, Northrop Grumman Corporation &amp; Stefan Niculescu, PTC</td>
</tr>
<tr>
<td>9:50-10:05 AM</td>
<td>Break</td>
<td></td>
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<tr>
<td>10:05-10:30 AM</td>
<td><strong>Technical Sessions</strong></td>
<td><strong>AM in Process Inspection</strong></td>
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<td></td>
<td>Advanced Composites Manufacturing Cost</td>
<td>Andrew Pokelwaldt, American Composites Manufacturers Association</td>
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<tr>
<td></td>
<td>Control</td>
<td>Consistent and Predictable Part Quality Enabled by In-Situ Metrology</td>
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<td>Andrew Carter, Stratasys Direct Manufacturing &amp; Zach Murphree, PhD, Velo3D</td>
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<td>Where is Quality in Industry 4.0?</td>
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<td>Conrad Leiva, iBASEt</td>
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<tr>
<td>10:40-11:05 AM</td>
<td><strong>Technical Sessions</strong></td>
<td><strong>Smart Manufacturing for Industry 4.0 II</strong></td>
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<tr>
<td></td>
<td>Finishing Lightweighting Aerospace Materials</td>
<td>Michael Knoblauch, Keyland Polymer Material Sciences LLC</td>
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<td>with Plasma Pretreatment and UV-Curable</td>
<td>Machine Connectivity, Automatic Part Production</td>
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<td>Powder Coatings</td>
<td>Sheets and Data Standards for AM Quality Control in Audits</td>
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<td>Alexandre Donnadieu, 3YOURMIND</td>
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<td>Internet of Things: Unique Applications for IoT-Based Sensor Devices</td>
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<td>Christopher Koch, Bosch Connected Devices &amp; Solutions</td>
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<tr>
<td>11:15-11:40 AM</td>
<td><strong>Technical Sessions</strong></td>
<td><strong>Quality 4.0: Turning Engineering Simulations into Real-Time Production Validation</strong></td>
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<td>Energy-Efficient Additive Manufacturing</td>
<td>Shiren Wang, Texas A &amp; M</td>
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<td></td>
<td>of Continuous-Fiber Composites</td>
<td>Benefits of In-Situ Monitoring in Metal</td>
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<td>Additive Manufacturing</td>
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<td>Melanie Lang, FormAlloy</td>
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<td>Quality 4.0: Turning Engineering Simulations into Real-Time Production Validation</td>
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<td>Donald Jasurda, Dimensional Control Systems (DCS)</td>
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<tr>
<td>12:00-4:00 PM</td>
<td><strong>Tour</strong></td>
<td>Lockheed Martin Corporation (Bus to depart at Noon)</td>
</tr>
</tbody>
</table>

View conference details, speaker bios, schedule, exhibitors and floor plan, and register at aerodefevent.com
Design Considerations for AM

Challenges in the Production of 3D-Printed Aircraft Interiors
Jim Monroe
American Additive Manufacturing LLC

A Novel Design Approach of Additively Manufactured Components for Armoring Applications
Murthy V C A D & Soundarapandian S, PhD
IIT Madras

Selective Cooling of Electronics Using 3D-Printed Cold Plates
Paul Bratt
ACI Technologies

Cybersecurity & Cyberphysical

Characteristic Aspects of Additive Manufacturing Security
Mark Yampolskly, PhD, Auburn University & Lynn Graves, University of South Alabama

Cyberphysical Security for Lockheed Martin Aerospace Additive Manufacturing: Initial Anti-Counterfeiting Case Study Report
Sharon Flank, PhD, InfraTrac Inc., Zeb Mitchell, Lockheed Martin Aeronautics Company, Maggie Guierrez, Lockheed Martin Aeronautics Company & John Fitzell, Terrapin Works

Cybersecurity for Protection of Electrification of Aircraft Machine and Path Planning of Subtractive 3D Printing
Zhengkai Wu, PhD
Georgia Institute of Technology
SPECIAL FEATURES ON THE EXHIBIT FLOOR

These events are included at no additional charge with your Exhibits Registration.

**Featured Presentation: Bond It...Don't Bolt It! Challenges and Opportunities for Structural Bonding**

*Tuesday, March 17*  
*1:00 PM – 1:50 PM*

**Doug Decker**  
President  
The Composites Consultants

**Brietta Oakley**  
Material and Process Engineer  
Lockheed Martin Aeronautics Company

The greater trends in aerospace manufacturing are moving away from traditional, mechanical fastening for large assemblies and moving towards large scale, structural bonding. The significant benefits of bonding are meaningful and evident in improved load introduction and load transfer, reduced weight and cost, as well as improved aerodynamics, and low observable performance. This session will provide an informative introduction into the world of bonded composites and provide a look into the challenges for full-rate production. An introductory, high-level summary of the DARPA TRUST (Transition Reliable Unitized Structure) effort will also be presented.

**Featured Presentation: Cybersecurity Maturity Model Certification**

*Wednesday, March 18*  
*1:00 PM – 1:50 PM*

**Katie Arrington**  
Chief Information Security Officer for Acquisition, Office of the Under Secretary of Defense for Acquisition and Sustainment, OUSD (A&S)

The CMMC is a mandatory DoD certification process that measures a Defense Industrial Base company’s ability to protect Federal Content Information and Controlled Unclassified Information within the supply chain. New requirements take effect in 2020, and this presentation will provide important details to those supporting DoD business. Framework and levels will be explained.

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**The DECK at the SME ZONE | Booth #815**

Where learning and networking come together.

The SME ZONE is the “home base” of everything happening at AeroDef. Major attractions will be hosted in the SME ZONE – and while you’re there, learn how SME can help you grow your business and advance your career.

Within the SME ZONE, you will:

- Attend all Deck presentations and panels. If it’s featured content, it’s happening in the ZONE. Your time in the SME ZONE will help you understand SME’s broader value to the industry.
- Engage with SME representatives to learn more about our organization, its mission, our education foundation, member resources, and how SME can provide you the resources you need to grow your career and grow your business.
Preferred Supplier Pavilion

Experience enhanced networking and connect with other attendees and pre-qualified contract aerospace and defense suppliers. The Aerofied Preferred Supplier Pavilion gives you the chance to directly engage with large and medium manufacturers who are looking to make both short- and long-term investments.

All Pavilion exhibitors are hand-selected by Aerofied. As you enter the Pavilion, you will be greeted by Aerofied representatives who create custom itineraries based on your specific interests, needs and requirements. Key contacts from large aerospace and defense companies share strategic insights through presentations and one-on-one sessions, and you’ll receive contact information that enables post-event follow up.

Career Development Forum
Tuesday, March 17
11:15 AM – 12:50 PM
The AeroDef Career Development Forum is for university students, faculty members and early careerists (emerging professionals). Industry thought leaders will discuss their professional journeys and the experiences that have shaped their careers. The Forum is an interactive event designed to enhance career development and grow future generations of leaders in the aerospace and defense manufacturing community.

SME's Research & Development Speed Presentation Challenge
Tuesday, March 17
2:00 PM – 3:30 PM
The purpose of the Challenge is to foster interest and provide the aerospace and defense manufacturing community with new perspectives and innovative ideas. This is a unique opportunity for undergraduates, graduate students and emerging professionals to communicate the value and share the results of their research to a broader audience. Presenters have five minutes to present their work. Come hear about advances and breakthroughs being developed in aerospace and defense manufacturing!

Cybersecurity Readiness Knowledge Bar
Hosted by: Blue Iron Network
Cybersecurity compliance is now a requirement to be awarded contracts. It is difficult to know where to turn to make sure that your firm’s data, and your client’s private information, is kept safe and secure. The experts at Blue Iron Network will host this knowledge bar and be available to help you. Learn about cybersecurity assessments all the way through to ongoing remediation, monitoring and support. Discover solutions that can solve your firm’s security challenges and achieve complete peace of mind (along with NIST compliance) in hours, not months.

Learn more about the special features on the exhibit floor and register at aerodefevent.com
DISCOVER NEW TECHNOLOGIES
AND COMPARE SOLUTIONS

Brochures only give you the basics. Videos only tell part of the story. The best way to learn about any new products is to see them in person. AeroDef 2020 will showcase the technologies aerospace and defense manufacturers rely on. Explore it all under one roof over two days.

Exhibitor list as of 12/20/2020

4D Technology Corporation
5ME LLC
Able Electropolishing Inc.
Adaptive Corporation
AddUp Inc.
Adron Tool Corporation
Advanced Machine Works
Aegis Software
AIP Precision Machining
Aligned Vision
Andrews Tool Company
AOTCO Metal Finishing Company
ARC Technology Solutions
Ascent Aerospace
Aviation Week Network
Baker Industries
Boedeker Plastics Inc.
Byron Products
Carr Lane Manufacturing Company
Cetec ERP
CGTech
Clark Fixture Technologies
Control Laser Corporation
Creaf orm
Crean Innovations
Da/Pro Rubber Inc.
Darex LLC
Delta Sigma Company
Desoutter Industrial Tools
Detroit Gun Works
DMS - Diversified Machine Systems
Drake Plastics Ltd Co.
Duroair Technologies USA Inc.
Dustcontrol Inc.
Economic Development Partnership of North Carolina
Empirical Technologies Corporation
Ergo Advantage
Ergotronix
Essentium Inc.
FANUC America Corporation
Fastems LLC
Fiber Dynamics Inc.
Fives Machining Systems
Flexial Corporation
Fluidic Systems
GelSight Inc.
General Dynamics
Genesis Systems IPG Photonics Company
Greta Machine Shop Inc.
Herding Filtration LLC
iBASET
IFS
IKONICS Advanced Material Solutions
Impacs Systems Engineering
InspectionXpert Corporation
JPL
JR Automation
Kanfit LTD
Keyence Corporation of America
Kipp Inc.
Kurt Industrial Products Division
KVI Aerospace
Level 3 Associates LLC
LillyWorks Inc.
Lockheed Martin Company
LPI Inc.
Makita USA Inc.
Mitsubishi Materials USA
Multiax America Inc.
Nabtesco Motion Control Inc.
National Manufacturing
Newcomb Spring Corporation
O’Keefe Ceramics
Origin Technologies Corporation
Orion Registrar
Petersen Precision Engineering LLC
Plataine
Power Pusher Division of Nu-Star Inc.
Pro Ultrasound
Pryor Technology
R3D International
Rand 3D
Raytheon
RePliForm Inc.
Robotmaster/Hypertherm Inc.
Sealing Devices
SERAPIID Inc.
SLM Solutions NA Inc.
SpaceX
Speed Tiger Precision Technology Co Ltd
Springfield Manufacturing Inc.
Starline
Starrag
Strand Products Inc.
Stressstech
Suhner Industrial Products Inc.
Sumitomo Electric Carbide Inc.
Survival Systems International
Swoosh Technologies
Tebis America Inc.
TechmerPM
The Boeing Company
Thermal Wave Imaging Inc.
Thermwood Corporation
THINKY USA
Ultrasonic Power Corporation
OpenAdditive (Universal Tech Co)
ViscoTec America Inc.
Visual Factories
VKS - Visual Knowledge Share
Vollmer of America
Wickert Hydraulic Press USA
YG-1 Tool Co.
ZEISS Industrial Quality Solutions

View the complete exhibitor list, floor plan and new product list at aerodefevent.com
CONNECT AND CELEBRATE

Join industry leaders, emerging professionals and your colleagues as you meet new faces and celebrate achievements. The networking receptions provide you with a relaxed atmosphere to strengthen existing relationships and develop new ones.

Complimentary Early Arrival Reception for Exhibitors & Conference Attendees
Monday, March 16 | 6:00 PM – 7:30 PM
Meet up with AeroDef conference attendees, speakers, advisors and exhibitors in a casual setting. Enjoy food and drinks and make plans to connect over the next three days.

Composites Awards Presentation
Tuesday, March 17 | 8:00 AM – 8:20 AM
Join us as we recognize the recipients of the Excellence in Composites Manufacturing Awards and the J. H. “Jud” Hall Composites Manufacturing Award.

Welcome Reception on the Exhibit Floor
Tuesday, March 17 | 4:00 PM – 5:30 PM
Enjoy complimentary drinks, meet the exhibitors and view the latest technologies and services.

SME’s Research & Development Speed Presentation Challenge Awards
Wednesday, March 18 | 8:00 AM – 8:20 AM
Cash prizes and awards will be announced for the first runner-up, second runner-up and overall winner based on the judged competition.

Closing Reception on the Exhibit Floor
Wednesday, March 18 | 4:00 PM – 5:30 PM
Join us as we close out the AeroDef 2020 exhibit hall and enjoy complimentary drinks as you conclude your exhibit visits and make new connections.

An unforgettable night at the world’s largest honky tonk!
Enjoy western-themed activities, including a live bull-riding show.
Eat, drink and enjoy some of Texas’s favorite foods.
Experience honky tonk attitude and friendly Fort Worth hospitality in a unique atmosphere.

Admission included with the purchase of the AeroDef Conference or exhibit space.

Register for the networking receptions and learn more about the awards programs at aerodefevent.com
TRAVEL DISCOUNTS
Take advantage of these savings as you plan your trip to AeroDef 2020.

Hotels | onPeak
SME has negotiated and secured a limited number of reduced-rate hotel rooms to make your trip to Fort Worth affordable. Through the travel experts at onPeak, rooms at the group rate are limited and available on a first-come, first-served basis. The hotels included are:

- Aloft Fort Worth Downtown
- Courtyard Fort Worth Downtown/Blackstone
- Embassy-Suites Fort Worth-Downtown
- Hampton Inn & Suites Fort Worth Downtown
- Hilton Fort Worth
- Omni Fort Worth Hotel

Warning! Be aware of unauthorized hotel solicitations. onPeak is the only official housing company associated with the event.

Book your hotel room with onPeak at aerodefevent.com/attend/hotel-travel.

Flights | Delta
Book your flight at delta.com or call Delta Meeting Network® at 1.800.328.1111*
Monday–Friday, 7:00 AM–7:30 PM (CT) and refer to Meeting Event Code NMTYH.

Guidelines:
- Eligible travel dates: March 13–22, 2020
- Eligible airport: Dallas, TX (DFW)
- Discounts apply to round-trip travel only
- Not valid with other discounts, certificates, coupons or promotional offers
- Not all fares are eligible for a discount
- Fare rules will determine eligibility

*Please note there is not a service fee for reservations booked and ticketed via Delta’s reservation 800-number.
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**Registration Options and Pricing**

<table>
<thead>
<tr>
<th>Attendee Pass Options</th>
<th>Early Bird Rates through February 14, 2020</th>
<th>Price Effective February 15, 2020</th>
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<tbody>
<tr>
<td>Full Conference Pass</td>
<td>$950</td>
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<tr>
<td>Full Conference Pass Plus 1 Workshop</td>
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<tr>
<td>1-Day Conference Pass</td>
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<tr>
<td>Workshops (If Purchased Separately)</td>
<td>$250</td>
<td>$275</td>
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<tr>
<td>Additive Fundamentals Review Program and Exam</td>
<td>$495</td>
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<tr>
<td>Exhibit Floor</td>
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<tr>
<td>Exhibits Plus (Exhibit Floor Plus 1 Conference Session)</td>
<td>$300</td>
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<tr>
<td>Tours (Each)</td>
<td>$100</td>
<td>$125</td>
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<tr>
<td>AeroDef Roundup at Billy Bob’s Texas (Included with Full Conference Purchase or Exhibit Space)</td>
<td>$50</td>
<td>$50</td>
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</tbody>
</table>

View registration terms and special rates for SME members, government employees and students at aerodefevent.com/pricing.

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SAVE WITH EARLY BIRD RATES THROUGH FEBRUARY 14, 2020

REGISTER NOW

SAVE AN EXTRA $200 ON THE FULL CONFERENCE WITH PROMO CODE SAVE200
REGISTER NOW & SAVE!


Save an extra $200 on the full conference.

See inside for details.

March 16-19, 2020
Exhibits: March 17-18
Fort Worth (TX) Convention Center

AERODEFEVENT.COM