

24th Annual NATIONAL TEST & EVALUATION CONFERENCE

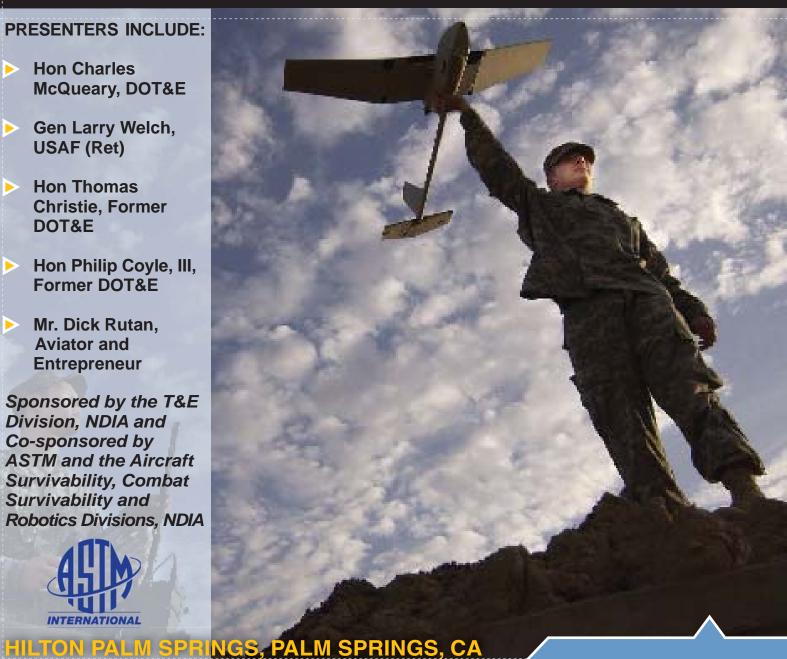
"Test and Evaluation of Autonomous Systems & The Role of the T&E Community in the Requirements Process"

PRESENTERS INCLUDE:

- Hon Charles McQueary, DOT&E
- Gen Larry Welch, **USAF (Ret)**
- Hon Thomas Christie, Former DOT&E
- Hon Philip Coyle, III, Former DOT&E
- Mr. Dick Rutan, **Aviator and** Entrepreneur

Sponsored by the T&E Division, NDIA and Co-sponsored by **ASTM** and the Aircraft Survivability, Combat Survivability and Robotics Divisions, NDIA





MONDAY, FEBRUARY 25, 2008

9:00AM – 5:00PM Conference Registration – **Horizon Foyer**

TUTORIAL SESSIONS

▶ Plaza AB
▶ Plaza CD

	SESSION A	SESSION B
1:30PM	1) "Combinatorial Testing: Required Knowledge in a World Where Traversing Every Possible Path is Impossible," <i>Dr. Mark</i> Kiemele, President and Cofounder, Air Academy Associates	2) "Survivability of Unmanned Systems," <i>Dr. Albert Moussa, President, BlazeTech, Inc.</i>
3:00PM	Afternoon Break	Afternoon Break
3:15PM	1 Cont.) "Combinatorial Testing: Required Knowledge in a World Where Traversing Every Possible Path is Impossible," <i>Dr. Mark</i> Kiemele, President and Cofounder, Air Academy Associates	3) "System Evaluation of UAVs," <i>Dr. Juan A. Vitali,</i> Chief, T&E, Joint PEO Chem Bio Defense

Tutorial Sessions are provided free of charge to all those registering for the conference. Your attendance at these valuable tutorials is encouraged.

5:00PM - 6:00PM Evening Reception / Display Area Open - Horizon Ballroom

6:00PM Display Area Closed for the Day / Conference Adjourned for the Day

TUESDAY, FEBRUARY 26, 2008

7:00AM – 5:00PM Conference Registration Open – **Horizon Foyer**

7:00AM – 8:00AM Continental Breakfast in Display Area – Horizon Ballroom

SESSION A

Chair: Mr. James O'Bryon, Chairman, NDIA T&E Division

8:00AM Call to Order and Remarks – Plaza Ballroom, Mr. Sam Campagna, Director,

Operations, NDIA

8:05AM Tribute to our Nation and Fighting Forces, National Anthem

8:10AM Welcome and Conference Introductory Remarks, *Mr. James O'Bryon, Chairman,*

NDIA T&E Division

CONFERENCE KICKOFF CAUCUS

8:15AM Unmanned Systems: What's New, What's Not?

Chair: VADM Joseph Dyer, USN (Ret), Executive Vice President & General

Manager, iRobot Corporation

Mr. Gene Fraser, Vice President, Northrop Grumman Unmanned Systems

Mr. Michael Gaulke, Chairman and CEO, Exponent Corporation

RADM Timothy Heely, USN, PEO Unmanned Systems, NAVAIR

Mr. Allen Nease, Chief, Robotics, Tyndall AFB

9:15AM Government Keynote Address: Hon Charles E. McQueary, Director OT&E, OSD

9:45AM Military Perspectives Keynote Address: General Larry D. Welch, USAF (Ret),

President, IDA, Former Chief of Staff, USAF

10:15AM Morning Break & Networking in Display Area – **Horizon Ballroom**

SESSION B

Chair: Dr. Juan A. Vitali, Chief, T&E, Joint PEO Chem Bio Defense

10:45AM OTAs Roundtable: "Applying the T&E Requirements Process to Unmanned / Autonomous Vehicles"

- Maj Gen Stephen T. Sargeant, USAF, Commander, Air Force Operational T&E Command (AFOTEC)
- RDML Stephen Voetsch, USN, Commander, Navy Operational T&E Force (OPTEVFOR)
- Col Michael S. Bohn, USMC, Commander, U.S. Marine Corps Operational T&E Activity (MCOTEA)
- Dr. James Streilein, Technical Director, Army T&E Command (ATEC)
- Mr. Stephen Daly, Deputy Director, ODOT&E, OSD

12:15PM – 1:15PM Luncheon – **Horizon Ballroom**: "Motivating Young Americans to Pursue Robotics Technology," *Mr. Marco Ciavolino, President, Enktesis, LLC*

A Roomba will be given away to benefit students of TechBrick Robotics. TeckBrick is a robotics club formed in 2003 for home schoolers in the Baltimore, MD area. This year, TechBrick has four U.S. FIRST competition teams with a total of 30 students and 5 adult coaches. Over the past 4 years, TechBrick has helped train more than 40 young engineers-to-be through the robotics program offered by FIRST. To view more information, please visit www.techbrick.com.

SESSION C

Chair: Dr. Paul H. Deitz, Acting Director, HRED, ARL

1:30PM "Unique Range Challenges of UAV/RPV/UUV Test and Evaluation," *RDML David*

Dunaway, USN, Commander, Naval Air Warfare Center, Weapons Division, China

Lake, AIR 5.0 Assistant Commander for T&E

1:55PM "Airspace Management Issues for UAVs, RPVs," Mr. Jeffrey "Goldy" Goldfinger,

ASTM Committee F38 Vice Chairman, L-3 Communications, Inc.

2:20PM Afternoon Break & Networking in Display Area

Horizon Ballroom

PALM SPRINGS, CA

CONCURRENT FOCUS SESSION D

Plaza AB

► Plaza CD

► Palm Canyon AB

	D1) T&E ROLE IN SYSTEM REQUIREMENTS Chair: Dr. Lowell Tonnessen, IDA	D2) T&E POLICY ISSUES Chair: Mr. Dick Dickson, Tybrin Corporation	D3) OT&E CHALLENGES Chair: RADM "Bert" Johnston, USN (Ret), Wyle Laboratories
2:30PM	"How Early Involvement Can Benefit the Requirements Generation Process for UAV Ground Checkout and Maintenance," Mr. Steven Madison, Northrop Grumman Corporation	"Application of MIL-HDBK-189 Reliability Growth Analysis (RGA) on Mobile Gun System (MGS) Product Verification Test (PVT)," <i>Dr. Dmitry Tananko,</i> <i>General Dynamics Land</i> <i>Systems</i>	"Operational Testing (OT) and Unmanned Aerial Vehicles," <i>Mr. Curt Cook, ODOT&E, OSD</i>
3:00PM	"Interoperability Testing in a Net Centric Environment; The Role of the Test Community in Development and Assessment of System-of-System Requirements," <i>Mr. Frank</i> <i>Alvidrez, MTSI Corporation</i>	"Innovative Acquisition Methodologies in Support of Test & Evaluation Objectives," Mr. Frank Parker, General Services Administration	"Test Pilot's Role in Flight Test of Unmanned Vehicles," Mr. Roy Martin, Northrop Grumman Corporation
3:30PM	"Automatic Generation of Requirement Specifications (Verification)," Mrs. Monika Morgan, General Dynamics Land Systems	"Applicability of Evolutionary Strategies for Acquisition of Autonomous Systems," <i>Dr. Ebru</i> <i>Sarigol, STM AS, Turkey</i>	"Testing in a Joint Environment Measures Framework," <i>Mr. Max</i> <i>Lorenzo, JTEC</i>
4:00PM	"Improving Requirements & Testing Process for Rapidly Fielded Unmanned Aircraft System Program," Mr. Jeremy S. Dusina, U.S. Army Evaluation Center	"Unmanned Systems Safety Guide for DoD Acquisition," Mr. Michael Demmick, NOSSA, N314, WSESRB	"Challenges for Testing in Defense System of Systems Environment," <i>Dr. Judith</i> <i>Dahmann, MITRE Corporation</i>
4:30PM	"Individual Protection in a CBRN Environment: Case Studies of the Role of T&E in Requirements Generation," Ms. Karen McGrady, JPM Individual Protection	"Proteus Testbed Utilized to Flight Test New Global Hawk Radar," <i>Mr. David Brown,</i> <i>Northrop Grumman Corporation</i>	"Evaluating Autonomy of UAVs," Dr. Herbert Hecht, SoHar, Inc.
5:00PM		"Unmanned Vehicle Synthetic Environment," <i>Mr. Angelo</i> <i>Prevete, Lockheed Martin</i> <i>Corporation</i>	"Deployability and Survivability Testing for the Deployable Autonomous Distributed System (DADS)," <i>Mr. Steve</i> <i>Whiteside, SPAWAR</i>

5:30PM

6:30PM - 8:30PM

Display Area Closed for the Day / Conference Adjourned for the Day

Walter W. Hollis Honors Banquet - Horizon Ballroom

Presentation of the Walter W. Hollis Award for outstanding lifetime achievement in

defense Test & Evaluation.



Recipient:

Dr. Paul H. Deitz, Acting Director HRED, ARL, APG, MD

In his early RDT&E work at the Ballistic Research Laboratories, Dr. Deitz distinguished himself in laser scintillation testing and eye-damage modeling studies and later in evaluations of smart weapons. Over the ensuing two decades, his seminal work in ballistic live-fire simulation and testing has contributed to improved vulnerability/survivability of our front-line combat platforms.

Dr. Deitz is a prolific writer, publishing numerous papers examining the detailed measures of simulation and testing, providing clarity and mutual synergism to the benefit of both disciplines. Over the past decade, Dr. Deitz has served as the Technical Director of AMSAA and the Acting Director of the Survivability/ Lethality Analysis Directorate, ARL.

He earned a BA in Physics from Gettysburg College and an MS and Ph.D. in Electrical Engineering from the University of Washington.



Guest Speaker:

Mr. Dick Rutan, Aviator and Entrepreneur

Mr. Dick Rutan made history in December of 1986 after completing Voyager's nine day, three minute and forty-four second flight around the world, non-stop and non-refueled, setting world records that remain unchallenged today. In July of 2002, Mr. Rutan was inducted into the National Aviation Hall of Fame in Dayton, OH. As a youth, he was fascinated by airplanes and flying and made his first flight at age six. He received his solo pilot's license and driver's license on his 16th birthday; the first possible moment he could be pilot in command.

Retired from the United States Air Force as a Lieutenant Colonel, Mr. Rutan flew 325 missions in Vietnam, 105 of them as a member of the Super Sabre FAC, a high-risk operation commonly known as the "MISTY's." He was hit by enemy ground fire on his last mission and was forced to eject from his burning F-100, to be rescued later.

Before retiring from the Air Force in 1978, Mr. Rutan was awarded the Silver Star, five Distinguished Flying Crosses, 16 Air Medals and a Purple Heart. Today, he travels the world lecturing about his flights and aviation's future, stressing, "If you can dream it, you can do it!"

WEDNESDAY, FEBRUARY 27, 2008

7:00AM - 5:00PM

Conference Registration Open – Horizon Foyer

7:00AM - 8:00AM

Continental Breakfast in the Display Area

- Horizon Ballroom

SESSION E

Chair: Dr. Mark Kiemele, President and Cofounder, Air Academy Associates

8:00AM Call to Order and Remarks – Plaza Ballroom, Mr. Sam Campagna,

Director, Operations, NDIA

8:05AM "Ground Robotics, Where Are We Headed?" Ms. Ellen Purdy, Director,

Joint Ground Robotics, OUSD (AT&L)

8:35AM Former DOT&E's Weigh-in on T&E Issues

► Hon Philip E. Coyle, III, Director OT&E (1994 – 2001)

► Hon Thomas Christie, Director OT&E (2001 – 2006)

9:35AM NDIA Industrial Committee on Operational T&E (ICOTE) Update from the

Chairman, Mr. Larry Graviss, President, Eagle Engineering, Inc.

10:00AM Morning Break & Networking in the Display Area – Horizon Ballroom

SESSION F - CONFERENCE TOWN MEETING Chairs: Dr. Paul H. Deitz, HRED, ARL and Mr. Britt Bray, DRC Corporation

10:30AM

The Role of T&E in the Requirements Process

- Brig Gen Greg Feest, USAF, J8, Joint Chiefs of Staff
- Mr. Allan M. Resnick, Director of Requirements Integration Directorate, Army Capabilities Integration Center (ARCIC), Ft. Monroe
- Mr. James Ruma, Vice President, Engineering Programs, GDLS
- RADM Bill McCarthy, USN (Ret), DDOT&E / Net Centric Warfare
- Col Michael S. Bohn, USMC, Commander, U.S. Marine Corps Operational T&E Activity (MCOTEA)

The Town Meeting is a unique forum used by the T&E Division to enable free and candid discussion of important, sometimes sensitive and controversial subjects. All comments made during the town meeting by both panelists and the audience are off the record and not for attribution to encourage candor and give-and-take on the topic at hand.

The issue being addressed this year is the role that the T&E community has, does and should play in the development, establishment and assessment of system requirements. Policies over the years have tended to keep the T&E community somewhat isolated from the requirements process due to the perceived potential conflict of interest.

With the growing emphasis on more rapid fielding, spiral development, acquisition reform, escalating costs and a host of other pressures on the acquisition process, a renewed discussion on the role of T&E in this process is overdue. Our distinguished participants will share their candid thoughts and debate this issue with each other, as well as fielding questions from the audience.

Members of the media are excluded from this session.

12:00PM - 1:00PM

Annual Tester of the Year Awards Luncheon

- Horizon Ballroom

2007 Tester of the Year Award Recipients:

OSD

Military: COL Kurt Lambert, USA Civilian: Ms. Darlene Mosser-Kerner Contractor: Mr. Brent Crabtree

OSD Special Category

Mine Resistant Ambush Protected Vehicle

Joint Test Team

U.S. Air Force

Military: Lt Col Shaun McGrath, USAF

Civilian: *Mr. Clyde Shook*Contractor: *Mr. Derrell Parker*

U.S. Army

Military: MAJ Robert McClintock, USA

Civilian: *Mr. Gregory Brewer* Contractor: *Ms. Lori Keaty*

U.S. Marine Corps

Military: Maj Stephen Augustin, USMC

Civilian: Mr. Paul Johnson

U.S. Navy

Military: LT Thomas Kneale, USN Civilian: Mr. Mark Koromhas Contractor: Ms. Susan Smola

SESSION G – GOVERNMENT STUDIES / REPORTS IMPACTING THE T&E COMMUNITY

Chair: Mr. William Yeakel, President, ORSA Corporation

1:15PM Defense Science Board (DSB) Study Report

"Terms of Reference," Mr. Christopher DiPetto, Executive Secretary, DSB, OUSD

(A&T)

"Synopsis of Results and Potential Impact of the DSB Report," Mr. Charles "Pete" Adolph,

Chair, DSB Study

2:00PM Report of GAO Study of UAVs

"Opportunities to Optimize the Operational Use of Unmanned Systems and Gain Synergy in Developing New Capabilities," Ms. Sharon Pickup, GAO, DC and Mr. Michael

Sullivan, GAO, Dayton









PALM SPRINGS, CA

CONCURRENT FOCUS SESSION H

► Plaza AB

Plaza CD

► Palm Canyon AB

	H1) T&E ANALYTICAL APPROACHES Chair: Dr. Anne Hillegas, Applied Research Associates, Inc.	H2) TEST INSTRUMENTATION / DATA COLLECTION / ARCHITECTURE Chair: Mr. Britt Bray, DRC Corporation	H3) T&E ROLE IN SYSTEM REQUIREMENTS Chair: Mr. Charles Larson, SURVICE Engineering
3:00PM	"Live, Virtual, and Constructive Simulation Use for Unmanned Vehicle Requirements and T&E," <i>Mr. Gary Kollmorgen,</i> <i>Referentia</i>	"TRIZ and Measurement and Detection Problems," Mr. Michael Slocum, Air Academy Associates	"Suitability-Effectiveness Trade-Off Economics," Dr. Donald Gaver, Naval Postgraduate School, Operations Research Department
3:25PM	"Root Cause Analysis & Evaluation of the Stryker Remote Weapon Station Inhibit Zone Violation Using a Six Sigma Approach," Mr. David Cafagna, General Dynamics Land Systems	"Time Space Position Information (TSPI) T&E Instrumentation Technology Investment Plan – Ensuring T&E Ranges Can Meet the Test Requirements of the Future," Mr. Dick Dickson, Tybrin Corporation	"Warfare Systems Engineering Challenges and T&E Approaches," Mr. Robert Connerney, Naval Undersea Warfare Center Division, Newport
3:50PM	"The Four Element Framework: Progress Towards an Integrated and Mission-based T&E Strategy," Mr. Chris Wilcox, Army Evaluation Center	"Semi-Autonomous Delivery Transport Vehicle for Undersea Sensors System Integration Testing Results Lessons-Learned," Mr. Pete Reinagel, SYS Technologies	"Integrating T&E into DoD Acquisition Contracts," <i>Ms.</i> <i>Darlene Mosser-Kerner, OUSD</i> (AT&L)
4:15PM	"An Enterprise Environment for Information Assurance / Computer Network Defense T&E," Mr. Steve Moore, Booz Allen Hamilton	"Test and Training Enabling Architecture, TENA, an Important Component in Joint Mission Environment Test Capability (JMETC) Successes," Mr. Gene Hudgins, BAE Systems	"Incorporating T&E into Your Requirements Process," <i>Mr.</i> <i>David Henry, Lockheed Martin</i> <i>Corporation</i>
4:40PM	"Applying Design of Experiments Methodology to Sortie Generation Rate T&E," Mr. Joseph Tribble, AVW Technologies	"Preserving Critical Knowledge," Mr. Roy Weber, VSE Corporation	"Improving T&E Participation in the Requirements Generation Process," Mr. Keith Montgomery, Lockheed Martin Corporation

5:05PM

Display Area Closed for the Day / Conference Adjourned for the Day

THURSDAY, FEBRUARY 28, 2008

7:00AM – 12:00PM Conference Registration Open – Horizon Foyer

7:00AM – 8:00AM Continental Breakfast in Display Area – Horizon Ballroom

8:00AM Call to Order and Remarks – Plaza Ballroom, Mr. Sam Campagna, Director,

Operations, NDIA

8:05AM "UAVs On-campus R&D," Dr. Steve Hottman, Physical Sciences Lab,

Associate Dean, New Mexico State University

SESSION I - REPORTS FROM THE COMBAT ZONE: OIF & OEF

8:30AM "Prevention of Fratricides and Overkills Using UASs in Network Centric

Warfare Operations," Mr. Stan Nair, U.S. Army Evaluation Center

"Global Hawk Concept to Combat; T&E Lessons Learned," Mr. Robert Ettinger,

Northrop Grumman Corporation

"ATEC Forward Operational Assessment Team," COL Mark Mills, USA, U.S. Army

ATC

10:00AM Morning Break & Networking in Display Area – Horizon Ballroom

10:30AM Display Area Closed

10:30AM "Lessons Learned in Fielding a UAS RQ4A Global Hawk in the Combat Theater,"

Mr. Sam McKeehan, Northrop Grumman Corporation

SESSION J – CONFERENCE SYNTHESIS: ACTIONS AND TAKEAWAYS Chair: Dr. Ernest Seglie, Science Advisor, DOT&E

11:00AM Mr. Christopher DiPetto, Deputy Director, Systems & Software Engineering, OUSD (A&T)

Mr. David Duma, Principal Deputy, ODOT&E

Maj Gen George Harrison, USAF (Ret), Georgia Tech Research Institute

Dr. James Streilein, Technical Director, Army T&E Command

Mr. Steven K. Whitehead, Executive Director, Navy OPTEVFOR

The discussion of this panel on the overall thrust of the conference will serve as the basis of a White Paper and an Overview article to be published in NDIA's

National Defense Magazine.

11:55AM Closing Remarks, Mr. James O'Bryon, Chairman, NDIA T&E Division

12:00PM Conference Adjourned









WALTER W. HOLLIS HONORS BANQUET

The Walter W. Hollis Award is presented annually in recognition of lifetime contributions and achievement in the area of defense Test & Evaluation. The Award is presented in the name of Walter W. Hollis who is recognized for his dedicated and long-standing service in the field of Test & Evaluation.

Previous recipients include:

- Mr. James F. O'Bryon, Former DDOT&E / LFT (2007)
- RADM Bert Johnston, USN (Ret), Wyle Laboratories (2006)
- ► Hon Thomas Christie, DOT&E, OSD (2005)
- Dr. Marion Williams, HQ AFOTEC (2004)
- Mr. James Fasig, Aberdeen Test Center (2003)
- Mr. G. Thomas Castino, Underwriters Laboratories, Inc. (2002)
- ▶ Hon Philip Coyle, III, DOT&E, OSD (2001)
- Mr. Walter Hollis, Department of the Army (2000)

TESTER OF THE YEAR AWARDS LUNCHEON

The awards, presented to outstanding individuals in the field of Test & Evaluation, offer OSD and each Military Service Test & Evaluation Department the opportunity to select three award recipients for recognition as the Tester of the Year in specific categories. The three categories recognized are: Military, Civilian and Contractor.

T&E EXECUTIVE COMMITTEE

- Mr. Joe Andrese, APG
- Mr. Dennis Bely, ARL
- Dr. Keith Bradley, LLNL
- Mr. Brit Bray, DRC Corporation
- RADM David Crocker, USN (Ret), CSC
- Dr. Paul Deitz, HRED
- Mr. Dick Dickson, Tybrin Corporation
- Mr. Russ Hauck, National Center for Simulation
- Dr. Anne Hillegas, ARA, Inc.
- Mr. John Illgen, Northrop Grumman Corporation
- > RADM "Bert" Johnston, USN (Ret), Wyle Laboratories
- Dr. Mark Kiemele, Air Academy Associates
- Mr. Chuck Larson, SURVICE Engineering
- Mr. James O'Bryon, The O'Bryon Group
- ▶ Dr. Ernest Seglie, ODOT&E
- Mr. Jack Sheehan, FCSCTO
- Dr. Lowell Tonnessen, IDA
- Dr. Juan Vitali, JPEO-CBD, OSD
- Mr. Tom Wissink, Lockheed Martin Corporation
- Mr. Bill Yeakel, ORSA Corporation

THANK YOU TO OUR PROMOTIONAL PARTNER



AIR ACADEMY ASSOCIATES

Air Academy Associates specializes in simplifying the disciplined and meticulous use of powerful tools and methodologies such as Design of Experiments/Multivariate Testing, High Throughput Testing (HTT), and Design for Six Sigma. DOE provides more information per data point collected than any other method and is a key to developing robust designs. HTT, a method for reducing the number of test cases while still maintaining adequate test coverage, focuses on constructing the most useful test combinations from a large number of variables, each with many possible options. Design for Six Sigma enables organizations to decrease time to market by 25 % to 40% which results in overall cost savings of 20% to 40% due to the utilization of fewer resources. Using data and a DFSS scorecard, we help clients zero in on the most likely causes of failure rather than relying on conjecture.

Our Competitive Excellence Model provides our clients with the plan, strategy, and tactics – including the methods, tools, and techniques – needed to preserve market share, profitability, and brand recognition and to enable the client organization to evolve by developing new life cycle curves for new products/ services or new generations of products/services. Our A3CE model, which has at its foundation our Knowledge Based Strategy, incorporates Lean, Six Sigma, and Systematic Tactical Innovation as Preservation activities and Design for Six Sigma and Systematic Strategic Innovation as Evolution activities.



Air Academy Associates provides value to our customers by:

- Educating leaders in our proven Knowledge-Based Business Strategy which emphasizes Voice of the Customer, Strategic Planning, and Systematic Innovation.
- Customizing our support and materials based on the client needs.
- Utilizing mature and experienced consultants who are proficient at problem-solving and who excel as classroom instructors and knowledge transfer agents.
- Incorporating advanced methods and techniques such as Robust Design, Tolerance Allocation, Expected Value Analysis, Axiomatic Design, etc., into our programs to optimize current performance and to enhance design and development phases.
- Developing supplemental strategic alliances to insure that our clients' needs are met.

For additional information, please contact an Air Academy Associates Business Development representative at 1-800-748-1277 or visit www.airacad.com.



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THANK YOU FOR ATTENDING

WE LOOK FORWARD TO
SEEING YOU NEXT YEAR IN
ATLANTIC CITY
MARCH 2-5, 2009





24th Annual
NATIONAL
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