

Department of Defense  
Human Factors Engineering  
Technical Advisory Group  
Meeting 63



3-6 May 2010

Host:

Air Force Research Laboratory  
Warfighter Readiness  
Mesa, AZ

## Meeting Theme

### Readiness for the Future

It is imperative that our nation be ready to respond to the future, whether it's planned or unexpected, special activities or major events. Human performance is vital to maintaining readiness and overall system performance. Ensuring our nation's responders are provided systems and equipment optimized for their use is the main purpose of HFE and HSI practitioners. Most all of us, in one way or another, are involved in the acquisition of systems with the purpose of making the systems better for the operator, maintainer, and system support personnel. Attending the TAG is a great way to learn and participate with working groups that are making these positive impacts. What have you or your organization done to prepare for the future, whether your efforts are for influencing current projects in acquisition, research, and development efforts, or assisting future projects through defining requirements? What can we do to prepare ourselves for what lies ahead concerning future technology, and leverage that technology to accommodate the operators and maintainers? Are you ready for the challenges? Are you ready for the future?

# PROGRAM SUMMARY

**Department of Defense  
Human Factors Engineering Technical Advisory Group  
Meeting 63: 3-6 May 2010 Tempe, AZ**

## ***Monday, 3 May***

- 0800 – 0930 Executive Committee Meeting
- 0930 – 1000 New Member Orientation
- 1000 – 1130 Training Session
- 1000 – 1130 Unmanned Systems Interest Group
- 1130 – 1300 Luncheon break
- 1300 – 1700 Plenary Session
- 1500 – 1530 Networking, Coffee
- 1800 – 2000 Mixer

## ***Tuesday, 4 May***

- 0730 – 0830 Technical Society/Industry
- 0730 – 0830 Cognitive Readiness Interest Group
- 0730 – 0830 Mission Centric Human Performance Interest Group
- 0830 – 1100 Human Factors Test and Evaluation
- 0830 – 1100 Workload and Stress
- 0930 – 1000 Networking, coffee
- 1100 – 1230 Luncheon Break
- 1230 – 1430 Human Factors Standardization
- 1230 – 1430 User-Computer Interaction
- 1430 – 1500 Networking, coffee
- 1500 – 1700 Controls and Displays
- 1500 – 1700 Human Factors in Training
- 1500 – 1700 Human Factors Engineering/Human Systems Integration: Management and Applications
- 1715 – 1830 Service Caucuses

## ***Wednesday, 5 May***

- 0745 – 1100 Tour of Mesa Labs/AFRL
- 1100 – 1230 Luncheon Break
- 1230 – 1430 Design: Tools and Techniques
- 1230 – 1430 Human Factors in Extreme Environments
- 1230 – 1430 Personnel Selection
- 1430 – 1500 Networking, coffee
- 1500 – 1700 Human Modeling and Simulation
- 1500 – 1700 Sustained/Continuous Operations
- 1500 – 1700 Unmanned Systems Interest Group
- 1830 – 2100 Social

## ***Thursday, 6 May***

- 0830 – 1000 Operating Board
- 1000 Adjourn

# SESSIONS

**MONDAY, 3 MAY** *(meeting rooms are subject to change)*

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**Executive Committee – 0800 – 0930 – Dolores**

Executive Committee members only. Others by invitation of the Chair, Mr. Darren Cole.

**New Member Orientation – 0930 – 1000 – Dolores**

**Training Session – 1000 – 1130 – Dolores**

**Unmanned Systems Interest Group – 1000 – 1130 – Xavier**

- 1000 – 1015: Setup/Welcome
- 1015 – 1100: Air Force Predator Mishaps and Implications for Training
  - Dr. Bob Nullmeyer  
Operator Readiness Research Division  
Human Effectiveness Directorate  
711th Human Performance Wing (711 HPW/RHAS)
- 1100 – 1130: Unmanned Systems Business Meeting
  - Ajoy Muralidhar, Chair

**Luncheon Break – 1130 – 1300**

**Plenary – 1300 – 1700 – Palm E&F**

- Welcome to TAG-63
  - Mr. Darren Cole  
TAG Chair
- Welcome address from Host
  - LtCol Joel Boswell  
Commander  
AFRL Mesa Research Site
- Key note Address
  - Dr Herbert Bell  
Technical Advisor  
Warfighter readiness Research Division
- Human Performance, Training, and BioSystems: Ensuring focused, relevant and quality efforts capable of satisfying defense needs
  - CAPT Dylan Schmorow, MSC, USN, Ph.D.  
Acting Director, BioSystems Research Directorate  
Office of the Director, Defense Research and Engineering, Office of the Secretary of Defense
- Challenges of Human Behavior Representation: How Neuroscience Can Solve It
  - LCDR Joseph Cohn

**TAG Mixer – 1800 – 2000 – Poolside**

Technical Society/Industry – **0730 – 0830 – Xavier**

Cognitive Readiness Interest Group – **0730 – 0830 – Palm E**

Mission Centric Human Performance – **0730 – 0830 – Palm F**

Human Factors Test and Evaluation – **0830 – 1100 - Xavier**

- Human Factors Engineering (HFE) Survey and Risk Assessment for Operational Test and Evaluation of the USCG Response Boat, Medium (RB-M)
  - Christopher W. Parker  
BMT Designers & Planners, Inc., Arlington, VA
- Investigations of HSI in Air Force Test and Evaluation
  - Adrian O. Salinas & Steven Deal  
AFRL; Booz Allen Hamilton
- Using Situation Awareness Requirements to Evaluate Systems Impact and Specify Systems Requirements
  - Laura Strater  
SA Technologies, Inc., Carrollton, TX
- TBD
  - Lori Bratton  
NAVAIR Human Systems, Patuxent River, MD

Workload and Stress – **0830 – 1100 – Palm E**

Networking/Coffee – **0930 – 1000**

Luncheon Break – **1100 – 1230**

## Human Factors Standardization – 1230 – 1430 – Palm E

- Introduction of Attendees
- Status Reports
  - MIL-STD-1472, Human Engineering
  - An Approach to Integrate Human Computer Interface (HCI) Design Criteria into MIL-STD-1472
    - Mr. Brian Shaw
  - MIL-STD-2525, Common Warfighting Symbology
  - Military Symbology - A Human Factors Perspective
    - Ms. Tina Brown
  - NASA-STD-3001, NASA Space Flight Human Systems Standard
  - FAA Human Factors Design Standard
  - Flight Symbology Working Group
  - MIL-STD-1787, Aircraft Display Symbology
  - Reinstating MIL-STD-46855
- Presentations
  - DID for Human-Systems Integration Report
    - Mr. Steve Merriman
  - Translating English to English: Converting the UK Human Factors Integration Defence Standard for U.S. Air Force HSI Use
    - Dr. Bill Kosnik and Ms. Becky Singer
  - Impact of Acquisition Reform on Human Factors Standardization
    - Mr. Alan Poston
- Other Business
- Update of the Index of Government Standards

## User-Computer Interaction – 1230 – 1430 – Xavier

## Networking/Coffee – 1430 – 1500

## Controls and Displays – 1500 – 1700 – Xavier

- Next Generation Neuroadaptive Controls and Displays; Achieving Human-System Synergy
  - Roberto Champney, PhD  
Design Interactive Inc., Orlando, FL
- Determining Character Dimensions for Integrated Bridge System Displays to Support Multiple Work Contexts
  - Andrew Mikutel  
Naval Air Warfare Center Training Systems Division, Orlando, FL
- Wearable Eye and Head-Tracking Technology for Studying User-Computer Interaction, Measuring Operator Performance, and for use as a Field-Deployable Neuro-Diagnostic System
  - Dr. Bill Torch  
Med. Director, Neurodevelop. Neurodiagnostic Ctr & Washoe Sleep Disorders Ctr.;  
Chairman, Eye-Com Corp., Reno, NV
- Back to Basics: A Human Centric Hovercraft Design
  - John Taylor  
Naval Surface Warfare Center, Panama City, FL
- A Research Based Approach to the Development of a Human Factors Disaster Management Modeling and Simulation Tool to Support National Preparation
  - Dr. Pamela Bush  
Tech Solutions, Inc., Orlando, FL
- Next Generation Threat System
  - John Dicola  
Naval Air Warfare Center, Patuxent River, MD

## Human Factors in Training – 1500 – 1700 – Palm E

### *Panel Presentation: Human Factors Issues in Training for UAV Operators*

- 1500-1520: Lessons Learned from Air Force Predator Training and Operations
  - Bob Nullmeyer  
Air Force Research Laboratory, Mesa, AZ
- 1520-1540: Can System-Wide Automation Aids be Trained Out in UAV Operators
  - David Keller  
Naval Surface Warfare Center, Dahlgren, VA
- 1540-1600: US Army UAS Training Issues: Case of the RQ-B7 Shadow
  - John Stewart  
US Army Research Institute, Ft Rucker, AL

### *Individual Presentations: Papers on Human Factors Issues in Training*

- 1600-1620: Enhanced Training Effectiveness Using Automated Student Assessment
  - Chris Forsythe  
Sandia National Laboratories
- 1620-1640: Retention and Re-training of Complex Skill
  - Wallace Wulfeck  
Space and Naval Warfare Systems Center, San Diego, CA
- 1640-1700: FoCuS Windows: Evaluating the Impact of Dynamic Fidelity on Performance.
  - Lisa Scott Holt  
Lumir Research Institute (Air Force Research Lab, Mesa, AZ)

## Human Factors Engineering/Human Systems Integration: Management and Applications – 1500 – 1700 – Palm F

Technical Society/Industry – **1715 – 1830 – Sand Lotus (2<sup>nd</sup> Floor)**

Army Caucus – **1715 – 1830 – Palm E**

Air Force Caucus – **1715 – 1830 – Palm F**

Navy Caucus – **1715 – 1830 – Xavier**

NASA/DHS/FAA Caucus – **1715 – 1830 as needed – Wind Flower (2<sup>nd</sup> Floor)**

Tour of the Air Force Research Lab – **0745 – 1100**

Luncheon Break – **1100 – 1230**

Design: Tools and Techniques – **1230 – 1430 – Abbey North**

- Welcome, Sign-in, and Introductions
- Presentations
  - Rapid Prototyping Tools to Design Next Generation Military Rotorcraft Cockpit Displays and Controls
    - Bob Faerber  
Boeing
  - Apache Longbow Lighting
    - Dennis Schmickley and Gretchen Anderson  
Boeing
  - Human Modeling in Support of Maintainer Workspace Design
    - Christian Rossi and Steve Merriman  
Boeing
- Business Meeting
  - Open discussion
  - New business
  - Suggested topics for next meeting

Human Factors in Extreme Environments – **1230 – 1430 – Dolores**

Personnel Selection and Classification – **1230 – 1430 – Abbey South**

- Time-Sharing: A Critical Component of Pilot Situation Awareness (SA)
  - Cheryl A. Bolstad  
SA Technologies

Networking/Coffee – **1430 – 1500**

## Human Modeling and Simulation – 1500 – 1700 – Abbey North

- Modeling Self-Interruption in a Dual-Task Setting
  - \*Brian McClimens, Derek Brock, & Malcolm McCurry  
Naval Center for Applied Research in Artificial Intelligence,  
Naval Research Laboratory, Washington DC
- A Belief Network Simulation for Sensemaking
  - \*Celestine A. Ntuen  
Department of Industrial and Systems Engineering,  
North Carolina A&T State University, Greensboro NC
- Modeling and Analysis of Context-based Human-System Interaction
  - \*Clifton Forlines  
Human-Systems Collaboration Engineer, Draper Laboratory, Cambridge, MA
- Psychophysiology and Adaptive Systems Performance: Considerations for Human-Centered Design
  - Anil Raj<sup>1</sup>, \*Margery Doyle<sup>2</sup>, & Joshua Cameron<sup>1</sup>  
<sup>1</sup>Florida Institute of Human and Machine Cognition, Pensacola, FL  
<sup>2</sup>Cognitive Architects and Engineers, LLC, Medford Lakes, NJ
- Examination of Several Candidate Physiological Metrics for Adaptive Training in an Unmanned Aerial Vehicle Simulation
  - \*Ciara Sibley<sup>1,3</sup>, Gregory O. Gibson<sup>1</sup>, Anna Cole<sup>1,3</sup>, Daniel Roberts<sup>2</sup>, Jane Barrow<sup>2</sup>, Brian Taylor<sup>2</sup>, Carryl Baldwin<sup>2</sup>, & Joseph Coyne<sup>1</sup>  
<sup>1</sup>Warfighter Human System Integration Laboratory, Naval Research Laboratory,  
Washington DC <sup>2</sup>Department of Psychology, George Mason University, Fairfax VA  
<sup>3</sup>Strategic Analysis, Arlington VA

\* denotes presenting author

## Sustained/Continuous Operations – 1500 – 1700 – Dolores

- Fatigue Research at the FAA Civil Aerospace Medical Institute
  - Thomas Nesthus  
Federal Aviation Administration
- Topic TBD
  - Brett Sant  
Knight Transportation, Inc.
- Topic TBD
  - Graciela Silva  
Arizona State University
- Topic TBD
  - Wayne Ensign  
SPAWAR Systems Center, Pacific
- Topic TBD
  - Lynn Lee  
United States Air Force AFSOC

## Unmanned Systems Interest Group – 1500 – 1700 – Abbey South

- 1500 – 1510: Setup and Welcome
- 1510 – 1540: Logistics Support Challenges for EOD Unmanned Systems
  - David Frye  
Logistics Management Specialist,  
Navy Explosive Ordnance Disposal Technology Division,  
2008 Stump Neck Rd, Indian Head MD 20640
- 1540 – 1610: Mixed-Initiative Machine for Instructed Computing (MIMIC)
  - Sylvain Bruni  
Aptima, Inc.  
Work sponsored by the Office of Naval Research
- 1610 – 1640: 711th Human Performance Wing Research, Analysis, and Consultation for UAS

- John A. Plaga  
Senior Research Aerospace Engineer  
Lead for HSI Transition  
Human Performance Integration Directorate  
711th Human Performance Wing
- 1640 – 1700: Wrap up, Closing
  - Ajoy Muralidhar, Chair

Social – **1830 – 2100**

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THURSDAY, 6 MAY

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Operating Board – **0830 – 1000 – Abbey South**

- TAG Survey Results
  - TAG Coordinator

Adjourn – **1000**

## EXECUTIVE COMMITTEE

Chair (Air Force)	Mr. Darren Cole	(661) 275-3994 darren.cole@edwards.af.mil
Vice Chair (Army)	Dr. Pamela Savage-Knepshield	(732) 427-3854 DSN 987 pam.savageknepshield@us.army.mil
Immediate Past Chair (Navy)	Mr. Brad Collie	(850) 234-4744 bradley.collie@navy.mil
Army Representative	Dr. John Warner	(703) 695-5820 DSN 225 john.warner1@us.army.mil
Navy Representative	Dr. Daniel Wallace	(540) 653-8097 daniel.f.wallace@navy.mil
Air Force Representative	Mr. Adrian Salinas	(210) 536-4428 adrian.salinas@brooks.af.mil
NASA Representative	Ms. Faith Chandler	(202) 358-0411 faith.t.chandler@nasa.gov
FAA Representative	Dr. Thomas McCloy	(202) 267-7167 tom.mccloy@faa.gov
DHS Representative	Dr. Janae Lockett-Reynolds Mr. Darren Wilson	(202) 254-6611 janae.lockett-reynolds@dhs.gov (202) 254-6657 darren.wilson@dhs.gov
TAG Coordinator	Ms. Sheryl Cosing	(703) 925-9791 cosing_sheryl@bah.com

## SUBTAG CHAIRS

Controls and Displays	Ms. Marianne Paulsen	(407) 380-4743 marianne.paulsen@navy.mil
	MAJ Keith Higginbotham	(505) 853-5839 keith.higginbotham@kirtland.af.mil
Design: Tools and Techniques	Mr. Stephen Merriman	(972) 344-2017 stephen.c.merriman@boeing.com
Human Factors Engineering / Human Systems Integration: Management and Applications	Dr. John Warner	(703) 695-5820 DSN 225 john.warner1@us.army.mil
	Dr. Janae Lockett-Reynolds	(202) 254-6611 janae.lockett-reynolds@dhs.gov
Human Factors in Extreme Environments	Ms. Debbie Berdich	(281) 483-6382 debbie.berdich-1@nasa.gov
	Mr. Ajoy Muralidhar	(540) 284-0701 ajoy.muralidhar@navy.mil
Human Factors in Training	Dr. Brooke Schaab	(757) 203-3306 brooke.schaab@us.army.mil
	Dr. Peter Crane	(480) 988-6561x287 peter.crane@mesa.afmc.af.mil

Human Factors Standardization	Mr. Alan Poston	(410) 922-7725 aposton86@comcast.net
Human Factors Test and Evaluation	Ms. Amanda Bandstra	(850)235-5978 amanda.bandstra@navy.mil
	Mr. Bruce Hunn	(520) 538-4701 DSN 879 bruce.hunn@us.army.mil
Human Modeling and Simulation	LT Gregory Gibson	(202) 767-9004 gregory.gibson@nrl.navy.mil
Personnel Selection and Classification	Dr. Richard Arnold	(850) 452-9181 richard.arnold@med.navy.mil
Sustained/Continuous Operations	LCDR Walter Carr	(301) 319-7681 walter.carr@med.navy.mil
	Dr. Thomas Nesthus	(405) 954-6297 tom.nesthus@faa.gov
	Mr. Matthew Yanagi	(619) 553-7562 yanagi@spawar.navy.mil
System Safety/Health Hazards/Survivability	Ms. Barbara Palmer	(937) 781-2803 palmer_barbara@bah.com
	Mr. Ben Gibson	(210) 221-1622 Ben.gibson@us.army.mil
Technical Society/Industry	Ms. Barbara Palmer	(937) 781-2803 palmer_barbara@bah.com
User-Computer Interaction	Mr. Adrian Salinas	(210) 536-4428 adrian.salinas@brooks.af.mil
Workload and Stress	Dr. Julie Stark	(757) 462-2693 julie.stark@navy.mil
	CAPT Dylan Schmorrow	(703) 588-7404 dylan.schmorrow@osd.mil
Cognitive Readiness Interest Group	Ms. Katrina May	(410) 278-5856 DSN 298 katrina.may@arl.army.mil
Mission Centric Human Performance Measurement Interest Group	Dr. Elizabeth Bowman	(410) 278-5920 DSN 298 ebowman@arl.army.mil
Human Factors in Unmanned Systems Interest Group	Mr. Ajoy Muralidhar	(540)284-0701 ajoy.muralidhar@navy.mil