

**Department of Defense
Human Factors Engineering
Technical Advisory Group
(DoD HFE TAG) Meeting 69**



Host: Naval Air Warfare Center Training Systems Division

**Naval Support Activity Orlando
Partnership III Building at 3039 Technology Parkway,
Orlando, Florida 32826**

Meeting Dates: 4-8 May 2015

Meeting Theme:
**The Relationship of Training Requirements and
Technology to Mission-Level Capabilities**

With the development of new missions, capabilities, and platforms for surveillance and force projection, and the increasing prevalence of Live, Virtual, and Constructive (LVC) training and modeling requirements across platforms, missions, and integrated warfighting capabilities (IWC), the importance of human-centered training has never been greater. Scientists, engineers, and acquisition professionals seek a clearer understanding of how to optimize training requirements and capabilities with system design in new and upgraded acquisitions and technology. The challenge for this TAG is optimization of the relationship of training requirements to mission-level capabilities.

Program Summary

Monday, 4 May

1400 – 1730	Modeling & Simulation Training Session	PIII Rm 321
1500 – 1700	Executive Committee meeting	PII Rm 208
1730 – 1800	New member orientation	PII Rm 208

Tuesday, 5 May

0800 – 1130	Meeting 69 Plenary Session	PIII Rm 321
1130 – 1230	<i>Lunch Break</i>	
1215 – 1430	Modeling & Simulation (I)	PII Rm 208
1230 – 1430	Standardization (I)	PII Rm 209
1230 – 1430	Human Systems Integration (I)	PII Rm 211
1430 – 1500	<i>Break</i>	
1500 – 1700	Modeling & Simulation (II)	PII Rm 208
1500 – 1700	Standardization: 1472 Working Group (II)	PII Rm 209
1500 – 1700	Human Systems Integration (II)	PII Rm 211
1830 til	<i>Mixer, Bahama Breeze</i>	

Wednesday, 6 May

0730 – 0830	Tech Society/Industry Meeting	PII Rm 208
0830 – 1000	NDIA Human Systems Special Session	PIII Rm 321
1000 – 1030	CNO's Rapid Innovation Cell	PIII Rm 321
1030 – 1100	TAG Mentors Introduction	PIII Rm 321
1115 – 1215	Speed Mentoring Session & Working Lunch	PII Rm 208
1100 – 1230	<i>Lunch Break</i>	
1230 - 1430	Unmanned Systems & Trust in Autonomy Group (I)	PIII Rm 321
1230 - 1430	Safety, Survivability, & Health Hazards	PII Rm 209
1230 - 1430	Personnel (I)	PII Rm 211
1430 – 1500	<i>Break</i>	
1500 - 1700	Training (I): Medical/Healthcare Applications	PIII Rm 321
1500 – 1700	Personnel (II)	PII Rm 211
1500 - 1700	Human Performance Measurement	PII Rm 208
1700 - 1800	Service Caucuses	
	FAA/NASA	PII Rm 211
	USN/USMC	PII Rm 208
	Army	PII Rm 209
	Air Force	PII Rm 210
	DHS/USCG	PIII Rm 320
	Tech Society/Industry	PIII Rm 321

Thursday, 7 May

0830 – 1100	Unmanned Systems (II)	PII Rm 209
0830 – 1100	Design: Tools & Techniques	PII Rm 211
0830 – 1100	Controls & Displays	PII Rm 210
1100 – 1215	<i>Lunch Break</i>	
1215 - 1415	Poster and Demo Session	PIII Rm 321
	Weapons Simulation and Integration Lab Tour <i>(open to US citizens only)</i>	
1430 - 1630	UCF Institute for Simulation and Technology Tour	
1800 – til	<i>Dinner, Cheddars</i>	

Friday, 8 May

0830 - 1100	Extreme Environments	PII Rm 211
0830 - 1100	Cognitive Readiness	PII Rm 209
0830 - 1100	Training (II)	PII Rm 208
1100 – 1130	<i>Break</i>	
1130 - 1300	Operating Board Meeting / Working Lunch	PII Rm 208

DoD HFE TAG Meeting 69 Sessions

Monday, 4 May

1400 – 1730 M&S Concepts and Credible Practices

PIII Rm 321

Modeling Concepts

Introduction, John Rice, TAG HM&S SubTAG

- Kinds of Models: Uses, Capabilities and Limitations, Simone Youngblood, JHU APL
- Credible Practices for M&S, Simone Youngblood, JHU APL
- VV&A and Other Considerations
- NASA Stds vs DOD Guidelines

Dept./Agency Standards, Guidelines & Support Offices Panel

- Panel Introduction, John Rice, HM&S SubTAG
- National Aeronautics & Space Administration, Martin Steele
- Defense M&S Coordination Office, Bill Hopkinson
- Dept. of Homeland Security S&T Directorate, Syed Mohammad
- Marine Corps M&S Office, Luis Velazquez
- Air Force Agency for M&S, Edward Degnan
- Navy M&S Office (Slides from John Moore), John Rice, HM&S SubTAG
- Discussion, John Rice, HM&S SubTAG and Simone Youngblood, JHU/APL

1500 – 1700 Executive Committee meeting

PII Rm 208

1730 – 1800 New member orientation

PII Rm 208

- DoD HFE TAG Chair, CDR Henry Phillips

Tuesday, 5 May

Location

0800 – 1130 Meeting 69 Plenary Session

PIII Rm 321

- CDR Joseph Cohn, ASD(RE) HPTB Deputy: TAG Proponent Representative's Welcome to TAG 69
- CDR Henry Phillips, DoD HFE TAG Chair: Special Presentation
- CAPT Erik Etz, Executive Officer, NAWCTSD: NSA Orlando Overview
- CAPT Wes Naylor, Commanding Officer, NAWCTSD: Navy Learning Environment
- Dr. Laurel Allender, Director ARL HRED: Training, Technology, and Mission Effectiveness: The Army beginning with Von Steuben
- Mr. John Meyers, Technical Director NAWCTSD: Current Capabilities and Future Directions
- LtCol Walt Yates, Director USCM Program Manager for Training Systems: PM TRASYS Initiatives
- COL Bill Mueller, Air Force Life Cycle Management Center: HSI Implementation
- Ms. Faith Chandler, NASA: NASA's Technology Investment Strategy
- CAPT(R) Dylan Schmorrow, TAG Chair Emeritus: The TAG and the International Stage: Connecting and Contrasting Opportunities
- CDR Henry Phillips, DoD HFE TAG Chair: Human Readiness Level Working Group Report
- Dr. Chris Nemeth, President NDIA Human Systems Division: Introduction to the NDIA HSD Special Session
- CDR Henry Phillips, DoD HFE TAG Chair: Closing Remarks

1130 – 1230 Lunch Break

1215 – 1430 Modeling & Simulation (I)

PII Rm 208

- Army MSO (Presentation from M&S Workshop), Col Chris Ballard
- Session Introduction, John Rice
- Panel: State, Gaps and Future of M&S for HFE Research and Performance Improvement, Reinerman-Jones (Moderator)
Panelists: Shawn Burke (Moderator); Jack Norfleet; Avonie Parchment;
Doug Maxwell; David Metcalf; Peter Smith
- Credibility in Biomechanical and Physiological M&S for Space Flight, Lealem Malugua, NASA
- Surgical Simulation for Training, Robert Turner, American College of Surgeons
- JSTARS Discrete Event Simulation Manpower Study Recap Using IMPRINT PRO, Stephen McGee

1230 – 1430 Standardization (I)

PII Rm 209

- Introduction of Attendees
- Status Reports and Presentations

- MIL-STD-1474, Noise Limits (Mr. Bruce Amrein)
- MIL-STD-1472, Human Engineering (Mr. Alan Poston)
- An Analysis of Optimum Display Viewing Distances in a Human Factors Framework (Mr. Stephen Long)
- Status of the U.S. Army Anthropometric Survey (Mr. Joseph Parham)
- Occupant-Centric Platform (Ms. Dawn Woods)
- NASA HIDH Update; HSI Practitioner Guide (Dr. Mihriban Whitmore)
- Development of a Human-Systems Integration Standard (Mr. Owen Seely)
- G-45 Human Systems Integration Committee (Mr. Steve Merriman)
- Coast Guard Human Reliability Effort (Mr. Chris Kijora)
- Charter Changes
- New Business and Second Thoughts

1230 – 1430 Human Systems Integration (I)

PII Rm 211

- Setup and Welcome – Pamelyn Maynard, Session Chair
- Acquisition Program Human Systems Integration (HSI) Assessment: An Air Force HSI Emerging Approach – Ms. Julie Naga, Booz Allen Hamilton
- Air Force Human Systems Integration (HSI) Capabilities and Requirements Assessment Tool (CRAT) – Mr. Arpan Patel, Booz Allen Hamilton
- The Multi-Service Human Systems Integration Framework (HSIF): Activities for DoD Pre-Acquisition – Mr. Frank Lacson, Pacific Science and Engineering Group 25

1430 – 1500 Break

1500 – 1700 Modeling & Simulation (II)

PII Rm 208

- Business Meeting, John Rice
- Integrating Human in System of Systems Engineering M&S: Flexible Frameworks Agents-in-the-OODA-loop Proof of Cross Functional Reuse, Margery Doyle (AFRL)
- NASA Digital Astronaut Program, Lealem Mulugeta
- Robotics Operator Manager ACT-R Model and Validation, Daniel Cassenti
- Navy Virtual Environment for Launch Officers, Lee Sciarini (NPGS)
- Discussion of Implications of Future M&S in Human Factors Engineering for Government RDT&E Program Managers, John Rice, moderator
- Wrap-up, John Rice

1500 – 1700 Standardization (II)

PII Rm 209

- MIL-STD-1472 Working Group

1500 – 1700 Human Systems Integration (II)**PII Rm 211**

- Setup and Welcome – Pamelyn Maynard, Session Chair
- Execution of the US Army Anthropometric Survey (2010-2012) and Preparation of the Database, Mr. Joseph Parham, Natick Soldier R&D Center
- Implementing HSI across the DHS Systems Engineering Lifecycle: Guidance on the Selection of Tools and Methods, Ms. Angie Sebok, Alion Science and Technology
- Methods, Metrics, and Metadata: Standardized Capture of Human Factors Data for Enhanced Analytics, Mr. Steve Dorton, Sonalysts, Inc.
- Development of a Novel Test Methodology for Assessing the Impact of Clothing and Individual Equipment (CIE) on Weapon Compatibility, Mr. Jay McNamara, Natick Soldier Research, Development, and Engineering Center (NSRDEC)
- Large Scale Usability Evaluation of Biometric Technologies, Dr. Yevgeniy Sirotin, Scitor Corporation

1830 til Mixer, Bahama Breeze**Wednesday, 6 May****Location****0730 – 0830 Tech Society/Industry Meeting****PII Rm 208**

- SAE International, G-45 Human Systems Integration Committee Update, Steve Merriman, The Boeing Company
- OSD Sponsored Human Systems Integration (HSI) Working Group Update, Owen Seely, NAVSURWEPCEN Dahlgren, VA
- Acquisition Program Human Systems Integration: An Air Force HSI Emerging Approach, Julie Naga, Booz Allen Hamilton
- Human Performance Data: The Delicate Balance Performance Optimization and Privacy, Elizabeth Biddle, PhD., The Boeing Company

0830 – 1000 NDIA Human Systems Special Session**PIII Rm 321**

- Christopher Nemeth, Cognitive Solutions Division, Applied Research Associates
- Kelly S. Hale, PhD, Technical Operations, Design Interactive, Inc.
- Jean Castonguay, CogniSens Inc.
- Jeff Lyons, Virtual Heroes Division, Applied Research Associates

1000 – 1030 CNO's Rapid Innovation Cell PIII Rm 321

- Presentation by CDR Ben Salazar, Director CRIC

1030 – 1100 TAG Mentors Introduction PIII Rm 321

- Presentation by Allison Mead, NSWC DD, TAG Mentors Lead

1115 – 1215 Speed Mentoring Session & Working Lunch PII Rm 208

1100 – 1230 Lunch Break

1230 - 1430 Unmanned Systems & Trust in Autonomy Group (I) PIII Rm 321

- Setup and Welcome, AJ Muralidhar, Session Chair, with Melissa Nass-Flores, Rachael Lund, & Dr. Sherry Springs
- Multimodal Communication for Dismounted Human-Robot Teams, Dr. Daniel Barber
- Augmenting Robot Behaviors Using Physiological Measures of Workload State, Ms. Grace Teo
- The Effects of Information Level on Human-Agent Interaction for Route Planning, Ms. Julia Wright
- The Effects of Agent Transparency on Human Interaction with an Autonomous Squad Member, Mr. Anthony Selkowitz

1230 - 1430 Safety, Survivability, & Health Hazards PII Rm 209

- SubTAG Business, Mr. John Plaga
- Using Biomechanics to Improve Prediction of Physical Training Outcome: Overuse Injury and Army Physical Fitness Test (APFT) Models, Dr. Bryant Sih
- The Cognitive Effects of Long-Range and Rough-Water Transit on High-Speed Craft Operators, Dr. Neil Ganey
- Medical Cost Avoidance Model, LTC Jay Clasing
- Auditory Level-Dependence and Nonlinearity in the Auditory Hazard Assessment Algorithm for Humans (AHAH), Dr. Paul Fedeale

1230 - 1430 Personnel (I) PII Rm 211

- Introductory Remarks and Admin, Dr. Hector Acosta
- The Aviation Selection Test Battery - E: Improving Greatness, Michael Natali, Naval Aerospace Medical Institute

- Manned to Unmanned Aerial System (UAS) Knowledge, Skill, and Ability (KSA) Comparison, Jennifer Pagan, , Randy Astwood, CDR Henry Phillips, Naval Air Warfare Center Training Systems Division
- Individual Differences in Performance, Trust, and Stress during Multi-UAV Operation, Gerald Matthews, Jinchao Lin, Ryan Wohleber and Lauren Reinerman-Jones, University of Central Florida; Peter Chiu, University of Cincinnati; Gloria Calhoun and Gregory Funke, Air Force Research Laboratory; Heath Ruff, Infoscitex
- Sub TAG Discussion: Introducing a Proposal Toward Developing a Modern Personnel Selection-Classification Systems Taxonomy, Hector M. Acosta, PhD, CHFP, Air Force Recruiting Service; LT Natali, PhD, Naval Aerospace Medical Institute
- Admin & Session Close

1430 – 1500 *Break*

1500 - 1700 Training (I): Medical/Healthcare Applications PIII Rm 321

- Introductory Remarks and Admin, CDR Henry Phillips
- Modeling & Simulation Applications in the Medical Arena. CDR Joseph Cohn, PhD. OUSD (AT&L) Human Performance, Training & Biosystems Directorate
- Simulation for Healthcare Training, Michael McCauley, PhD, Naval Postgraduate School (NPS), Joe Sullivan, Veterans Administration/NPS
- Surgical simulation: Addressing Needs, Gaps, and Targeted Competencies, T. Robert Turner, PhD., American College of Surgeons
- Alternative Approach to Establish Inter-Rater Concordance, Catherine Strayhorn, IVIR Inc.
- Adapting Immersive Training Environments to Develop Squad Resilience Skills, Joan Johnston, PhD. Army Research Laboratory Human Research & Engineering Division (ARL HRED); Samantha Napier, M.S. ARL HRED, William Ross, PhD, Cognitive Performance Group
- NATO Human Factors in Medicine Panel (HFMP) Overview, CAPT(R) Paul Chatelier, PhD., NPS

1500 – 1700 Personnel (II) PII Rm 211

- Session Opening Remarks and Admin: Chair and Co-Chair
- The Navy's ASVAB Validation/Standards Program and Current Technical Focus Areas, Janet D. Held, NPRST/BUPERS-1 Millington, TN
- Beyond the Dichotomy of Pass/Fail Training Criteria in High-Attrition Air Force Specialties, Gregory G. Manley, PhD, Mark R. Rose, PhD, Air Force Personnel Center; Hector M. Acosta, PhD, Air Force Recruiting Service
- Examination of the Predictive Validity of the ASVAB for Several, USAF Enlisted Training Specialties, Gregory Manley, PhD, Air Force Personnel Center; Thomas R Carretta, PhD, Air Force Research Laboratory, 711th Human Performance Wing
- Toward Developing a Modern Personnel Selection-Classification Systems Taxonomy: Session II
- Sub TAG Participants: Admin & Session Close

1500 - 1700

Human Performance Measurement

PII Rm 208

- Introductory Remarks and Admin
- Proposed Human Performance Markup Language SISO Standard Discussion, Alex Walker, Aptima, Inc.; Beth Wheeler Atkinson, NAWCTSD
- fMRI Study of Landing Decision in Civilian Pilots, Maheen Adamson, VA Palo Alto/Stanford Medical School; Jerome Yesavage, VA Palo Alto/Stanford Medical School
- Systems-Based Metrics of Unit Performance Using Communications Data, Arwen DeCostanza, Army Research Laboratory; Co-Author: Kara Orvis, Aptima, Inc.
- Translating Research on Training Effectiveness to Requirements for Simulation Acquisitions
Presenter: Gregory Goodwin, U.S. Army Research Laboratory
- Augmenting P-8A Part-Task Training Operations through the Integration of Intelligent, Speech-Activated Role Player Agents, Brian Stensrud, Soar Technology; Charles Newton, Soar Technology; Beth Wheeler Atkinson, NAWCTSD; John Killilea, Stracon

1700 - 1800 Service Caucuses

FAA/NASA PII Rm 211

Air Force PII Rm 210

USN/USMC PII Rm 208

DHS/USCG PIII Rm 320

Army PII Rm 209

Tech Society/Industry PIII Rm 321

Thursday, 7 May

Location

0830 – 1100 Unmanned Systems (II)

PII Rm 209

- Setup & Welcome – Dr. Sherry Springs and Ms. Melissa Nass-Flores
- Trust in Autonomy Panel Session – Dr. Lauren Reinerman-Jones, Panel Moderator
Panelists: Dr. James P. Bliss, Mr. Irwin Hudson, Dr. Joseph B. Lyons, Dr. Gerald Matthews and Dr. Jim Szalma
- TAG Business/Charter review and Nominations for SubTAG Chair
- UxS SubTAG Wind-up and Thanks – SubTAG Chair

0830 – 1100 Design: Tools & Techniques

PII Rm 211

- Step Height and Ramp Slope for Vehicle Ingress/Egress, Dawn Woods
- The Use of Human Models to Verify Anthropometric Accommodation, S. Merriman
- Round table on the use of Human Performance Data in Design

0830 – 1100 Controls & Displays

PII Rm 210

- 1100 – 1215 *Lunch Break*

1430 - 1630 UCF Institute for Simulation and Technology Tour
1800 – til Dinner, Cheddars

0830 - 1100 Extreme Environments PII Rm 211

- 0830 - 1100 Cognitive Readiness PII Rm 209

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- Practical Operator Intelligent Tutor- Simple Key Loader: The Path Toward Effective and Affordable Intelligent Tutoring Systems, Tashara Cooper, Naval Air Warfare Center Training Systems Division

0830 - 1100 Training (II)

PII Rm 208

- Introductory Remarks and Admin, Dr. Kelly Neville
- Simulated Environments for Cybersecurity Training, Eric Ortiz, M.S., Institute for Simulation & Training, University of Central Florida; Lauren Reinerman-Jones, PhD, Institute for Simulation & Training, University of Central Florida
- Tracer FIRE Cyberforensic Training Platform, Benjamin Anderson, M.S., Sandia National Laboratories; Kevin Nauer, M.S.; Wellington Lee, M.S.; Jonathan T. McClain, M.S., & Robert G. Abbott, PhD, Sandia National Laboratories
- Adaptive Training for Combat Information Centers: Transitioning from Research Concepts to Technology Development, Jim Pharmer, PhD, Naval Air Warfare Center Training Systems Division
- Competency-Based Training System to Advance Learning Performance, Stu Rodgers, M.S., TiER1 Performance Solutions; Ryan Meyer, B.S., TiER1 Performance Solutions
- Cognitive Alignment with Performance Targeted Training Intervention Model: CAPTTIM
Quinn Kennedy, PhD, Naval Post Graduate School; MAJ Peter Nesbitt; LTC Jon Alt, PhD; & Ronald Fricker, PhD, Naval Post Graduate School
- Final Admin/Resolutions

1100 – 1130 Break

1130 - 1300 Operating Board Meeting / Working Lunch

PII Rm 208

EXECUTIVE COMMITTEE

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