



Department of Defense Human Factors Engineering Technical Advisory Group



DoD HFE TAG

Meeting Summary TAG-67

*Wright-Patterson AFB, Dayton, OH
30 April – 3 May 2012*



July 2012

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Meeting Theme



▶ Meeting the Human Factors Challenges of Future Unmanned Systems

The unprecedented success of unmanned systems in military, civil, space, and commercial operations has raised expectations for expanded features and roles for unmanned systems in future operations. The challenges ahead span the entire gamut of the Human Factors Engineering (HFE) enterprise from modeling and simulation to cognitive systems to test and evaluation and everything in between. These challenges include:

- | | |
|---|---|
| <ul style="list-style-type: none">• Interoperability• Autonomy• Communications• Propulsion and Power | <ul style="list-style-type: none">• Airspace Integration• Training• Manned-Unmanned Teaming |
|---|---|

The purpose of this meeting is to serve as a catalyst in finding dynamic solutions to the issues surrounding the future of unmanned systems and to provide a venue for the HFE community to present relevant topics in hopes of synergizing efforts and ideas.



Meeting Highlights



- ▶ Sixty-seventh meeting of the DoD Human Factors Engineering Technical Advisory Group Meeting
- ▶ Hosted by the Air Force Research Lab/711 Human Performance Wing
- ▶ Held at Wright-Patterson Air Force Base (Kenney Hall) and Tec^Edge
- ▶ 163 people in attendance, 80 attended plenary
- ▶ Tour of Wright-Patterson AFB Lab; 40 in attendance
- ▶ Mixer and Student Poster Session held at Hilton Garden Inn Hotel



Announcement

- ▶ The TAG Success Stories document is being updated with current examples
 - Stories included describe human factors engineering and human systems integration successes
 - Success Stories will be collected and compiled into a briefing for use by the Proponent and TAG membership to demonstrate value of human factors engineering and human systems integration
- ▶ The Test and Evaluation SubTAG did not meet at TAG-67 but expects to meet at TAG-68



Meeting Agenda

- **Monday, 30 April (Kenney Hall, WPAFB)**
 - 0700 - 0800 Executive Committee Meeting
 - 0700 - 0800 New Member Orientation
 - 0800 - 0815 Plenary Session Opening Remarks - CAPT Dylan Schmorrow (OSD)
 - 0815 - 0855 Mr Jack Blackhurst (711 HPW/RH) and Dr. John Tangney (OSD)
 - 0855 - 0925 Mr Maris Vikmanis (711 HPW/XP)
 - 0925 - 0955 Dr. Thomas Davis (Army)
 - 0955 - 1025 Dr. Julie Marble (NRC)
 - 1025 - 1045 Mr. Eric Geiselman (Southern Ohio HFES Chapter; 711 HPW/RHCV)
 - 1045 - 1120 Lt Col Tvaryanas (711 HPW/HP)
 - 1120 - 1130 Closing Remarks (CAPT Schmorrow)
 - 1130 - 1300 Luncheon Break (Mo Joe's)
 - 1300 - 1700 W-P Lab Tour
 - 1800 - 2000 Mixer & Student Poster Session - Hilton Hotel



Meeting Agenda

- **Tuesday, 1 May (Tec^AEdge)**
 - 0730 - 0830 Refreshments
 - 0730 - 0830 Technical Society/Industry (Palmer & Merriman)
 - Harris, S; Human Factors and Interoperability: NIEM, DODAF and MODAF - Say What?
 - Salas-Snyder, S; Using Human Systems Integration to Enhance Biometrics Technology
 - Alley, T; Potential Additional Societies and Technical Groups for TSI Affiliation
 - 0830 - 1100 Human Performance Measurement (Grubb)
 - Cassenti, DN; The Effects of Bandwidth Limitations and Time Pressure on the Ability to Manage Robot Operators in an IED Detection Task
 - Blackford, E; Non-Contact Heart Rate Metrics through Video Based Photo-Plethysmography
 - Reinerman, L; Real-Time Physiological Measures
 - Jones, E; Developing Valid Performance Measures for Multi-Tasking Environments
 - Grubb, J; TBA



Meeting Agenda

- **Tuesday, 1 May (Tec^AEdge) (continued)**
 - 0830 - 1100 Personnel Selection and Classification (Taylor & Acosta)
 - Carretta, T; Cyber / IT Test Development: Project Overview - Archer, S; Testing Cognitive Behavior of Service Members Pagan, J; Unmanned Aerial System (UAS) Selection Carretta, T; Predictive Validity of USAF URT Selection Methods Acosta, H; TBAS: An Overview and Lessons Learned Foster, T; Performance Based Measures Test: Implementation Challenges Planning and Business Meeting
 - 0830 - 1100 Standardization I (Poston)
 - MIL-STD-1472, Human Engineering
 - MIL-STD-2525, Common Warfighting Symbology
 - NASA-STD-3001, NASA Space Flight Human Systems Standard
 - FAA Human Factors Design Standard
 - MIL-STD-1787, Aircraft Display Symbology
 - Update of Data Item Descriptions
 - MIL-STD-1474, Noise Limits



Meeting Agenda

- **Tuesday, 1 May (Tec^AEdge) (continued)**
 - 0830 - 1100 Standardization I (Poston) (continued)
 - Occupant-Centric Survivability
 - HFES
 - Tvaryanas, J; Conversion of AF HSI Document to a NATO Handbook Narkevicius, J; FAA ATC Symbolology Patterson, F; Cockpit Spatial Strategies
 - 0930 - 1000 Networking, Coffee
 - 1100 - 1230 Luncheon Break
 - 1230 - 1430 Modeling and Simulation I (Mittu & Rice)
 - Patterson, E & Duchon, A; Macrocognition Deciding Strategies During Overconstrained Tasks and Under Information Overload Conditions
 - Rose, C; Towards Optimization of Macrocognitive Processes: Automating Analysis of Social Positioning in Group Interactions
 - McComb, S; Using Simulation and Optimization to Examine Team Cognition Veksler, B; Computational cognitive modeling of time on task effects and their alleviation



Meeting Agenda

- **Wednesday, 2 May (Tec^AEdge)**
 - 0730 - 0830 Refreshments
 - 0830 - 1100 User-Computer Interaction (Taylor)
 - Lauren Reinerman-Jones, L; Exploring Robot to Human Communication
 - Swanson L; Designing and Evaluating an Adaptive Flight Deck Display for Trajectory-Based Operations in NextGen
 - Colburn, R. & Ford, J; Human Systems Integration Considerations for Multi-Aircraft Control (MAC) of Remotely Piloted Aircraft (RPA)
 - Bryant, AR; Empirical Studies of Sensemaking in Binary Code Analysis for the Design of More Autonomous Cyber Interfaces
 - 0830 - 1100 System Safety/Health Hazards/Survivability (Plaga)
 - Wright, N; OSD and DSOC Helicopter Seating Studies Zehner, G; An Overview of USAF Anthropometry Plaga, J & Hill; SAFE Association
 - Perry, C; Assessment of Cockpit Integration of the Joint Service Aircrew Mask (JSAM)
 - Parr, J; Evaluation of The Nij Neck Injury Criteria With Human Neck Response Data



Meeting Agenda

- **Tuesday, 1 May (Tec^AEdge) (continued)**
 - 1230 - 1430 Controls and Displays (Paulsen)
 - Stanard, T; Timeline Interfaces for Supervisory Management of Multiple RPAs
 - Nicholson, G; Impediments to Rapid Insertion of Innovative Displays and Peripherals
 - Miller, ME; Concept and Evidence for a Very High Resolution OLED HMD
 - DeCarlo, A; Support Environment for Automatic Context-switching User Experience
 - Finomore Jr, VS; Development and Evaluation of a Multi-Modal Network-Centric Communication Management Suite
 - Myles, K; An Alternative Head-Mounted Tactile Display for Enhancing Situation Awareness
 - 1230 - 1430 Unmanned Systems Interest Group I (Muralidahr)
 - Kelley, T; The Continued Development of the Symbolic and Sub-symbolic Robotics Intelligence Control System (SS-RICS)
 - Schurr, N; Human Robot Interaction for Room Clearing
 - Reinerman, L.; Augmenting Robot Behaviors Using Physiological Measures
 - Williamson, D; Internet Relay Chat (IRC) Coordinate Extractor (ICE)



Meeting Agenda

- **Tuesday, 1 May (Tec^AEdge) (continued)**
 - 1430 - 1500 Networking, Coffee
 - 1500 - 1700 HFE/HSI: Management and Applications I (Scott)
 - Kenyi, L.; "Human Factors Practitioner Core Knowledge, Skills and Abilities"
 - Lemon, A., & Cowen, M.; "Command and Control Display Design: Task-Centered Considerations"
 - Luby, M., & Kaminski, L.; "Effects-Based Human Systems Integration"
 - Plott, C.; "Human System Integration Pathways to Affordability"
 - 1500 - 1700 Unmanned Systems Interest Group II (Muralidhar)
 - Hawley, JK; Human Performance challenges for Automated systems: Lessons from Patriot after the Second Gulf War
 - Gosakan, M; A Symbiotic Approach to Predicting UAS Operator Workload: SEEV and MRT Working Together
 - Pray, R; & Vincenzi, DA; Using an Open Source, Modified Service Oriented Architecture to Achieve Multi-Platform, Multi-Fidelity Unmanned Vehicle Simulation for Training and Research Opportunities
 - Cohn, J; Invitation to UAS Selection Approaches, Training, technologies and Interface Design Special Session



Meeting Agenda

- **Tuesday, 1 May (Tec^AEdge) (continued)**
 - 1500 - 1700 Human Factors in Training (Atkinson)
 - McKinley, A; Improved Skill Learning: Enhancing Formation & Retention on Non-Declarative Memories
 - Bernard, M; Using High Performance Computing to Examine the Processes of Neurogenesis Underlying Pattern Separation/Completion of Episodic Information
 - Vincenzi, D; The Need for Crew Resource Management (CRM) Training in Unmanned Aerial Systems (UAS)
 - Winner, J; Gaming Research Integration for Learning Lab (GRILL): Exploring Game-Based Approaches to Effective Military Training & Simulation
 - Patterson, F; Training for Spatial Disorientation Avoidance, Recognition, and Recovery
 - 1700 - 1830 Service Caucuses (ALL)



Meeting Agenda

- **Wednesday, 2 May (Tec^AEdge) (continued)**
 - 0930 - 1000 Networking, Coffee
 - 1100 - 1230 Luncheon Break
 - 1230 - 1430 M&S II: Simulation and Learning (Mittu & Rice)
 - Peters, S; Use of human simulators for improving human performance of AF medical air crews Kozlowski, S; Modeling Team Knowledge Emergence
 - Jastrzembski, Tiffany; Cognitive Modeling for Performance Prediction: Making Learning More Efficient and Effective
 - Veksler, V; Integration of Chunking, Associative, and Reinforcement Learning: less effort and better predictions.
 - 1230 - 1430 Standardization - 1472H (Poston)
 - 1230 - 1430 Human Factors in Extreme Environments & SS (Plaga)
 - Ganey, HCN; Characterizing the Motion Spectra Experienced by Operators in Different Vehicle Types Smith, S; USAF Vibration
 - Moss, S; Challenges of Black Box Recorders in a Blast Environment



Meeting Agenda

- **Wednesday, 2 May (Tec^AEdge) (continued)**
 - 1300 - 1700 Design Tools and Techniques (Feary & Merriman)
 - Reinerman-Jones, L & Guznov, S; Tool for Assessing Metrics Applicable for Evaluating Nuclear Power Plant Design
 - Bearden, G & Stanard, T; Low Fidelity Table Top Exercise to Collect Cognitive Requirements for an RPA Resource Allocation Assistant: Work in Progress
 - Sheff, S; iWarrior, a Prototype Web-based Tool for Supporting Mission Planning and Awareness of the Battle Space.
 - Meyer, R; Human Factors Analysis Support Tool (H-FAST)
 - Scott-Nash, S; MANPRINT Enterprise Tracker Organizer tool (META).
 - DTT SubTAG Business Meeting



Meeting Agenda

- **Thursday, 3 May (Tec^AEdge) (continued)**
 - 0800 - 1200 Unmanned Systems Interest Group III: Special Session on Unmanned Aircraft Systems (UAS) Selection, Approaches, Training Technologies, and Interface Design (Muralidahr & Cohn)
 - Stewart, JE; Perspectives on Army Manned-Unmanned Teaming: The Changing Role of the Unmanned Aircraft System (UAS) Operator
 - Carretta, TR; United States Air Force Remotely Piloted Aircraft (RPA) Personnel Selection and Skills, Abilities, and Other Characteristics (SAOC) Review
 - Arnold, R & Williams, H; Vincenzi, DA; Identification of Crew Task and Skill Requirements Across Multiple Unmanned Aircraft Systems
 - Schurr, N; Improving UAS Performance by Understanding the Operator Pagan, J; Unmanned Aerial System (UAS) Selection: The Path Forward
 - Strand, M, Rowe, L; Air Force Research Laboratory's Unmanned Aerial Systems Training Research Program
 - Cohn, J; UAS Selection Approaches, Training, technologies and Interface Design Special Session open discussion closing comments
 - 1130 - 1300 Luncheon Break
 - 1300 - 1500 Operating Board
 - 1500 Adjourn



Meeting Agenda

- **Opening Remarks**

CAPT Dylan Schmorrow, DoD HFE TAG Chair, Deputy Director, Human Performance, Training and BioSystems Research Directorate, Office of the Assistant Secretary of Defense.

- CAPT Schmorrow welcomed TAG-67 attendees to Wright-Patterson AFB on behalf of Dr. Patrick Mason (Director, Human Performance, Training, and Biosystems Directorate, OASD(R&E))
- TAG chair is an invited member of the Joint Human Systems Integration Steering Committee
- OSD is again collecting “success stories” from HFE TAG members.



Plenary Session

- **Plenary Presenters**

- **Mr. Jack Blackhurst, 711 HPW/RH**

- Mr. Blackhurst, chair of the Human Systems Community of Interest, also welcomed the attendees to the TAG meeting which was being hosted by the 711th Human Performance Wing at Wright-Patterson AFB.



Plenary Session

Mr. Maris Vikmanis, 711th HPW/XP

- Mr. Maris Vikmanis, Chair of the Human Systems Community of Interest Working Group, provided an overview of Human Systems activities since the early 1990s, a time of “Tactical Decision Making Under Stress,” Rotorcraft Pilot’s Associate, panoramic Night Vision goggles, interactive multi-sensor analysis, and the tri-service “Reliance” initiative, which increased the influence of the Human Systems community.
- In the latest Quadrennial Defense Review, the following key mission areas were identified as drivers
 - Defend U.S. and Support Civil Authorities at Home
 - Succeed in COIN/Stability/CT Ops
 - Build Partner Security Capacity
 - Deter and Defeat Aggression in Anti-Access Environments
 - Prevent Proliferation and Counter WMD
 - Operate Effectively in Cyberspace



Plenary Session

Mr. Maris Vikmanis, 711th HPW/XP (continued)

- Unmanned vehicle development is having a major influence over current research and development
- Desire to move closer to “full autonomy” of unmanned systems.
- Decision-making is emerging as an important area of investigation and neural science is getting a lot of attention.
- For HFE, the following areas are primary:

•Physical fit

•Neural fit

•Biological fit

•Cognitive fit

- Opportunities for the DOD HFE TAG include the following:
 - Strengthen the grass roots connection
 - Explore the joint mission space
 - Create new metrics to measure human performance and effectiveness
 - Need-driven technology solutions
 - Project adversarial opportunities



Plenary Session

Mr. Jack Blackhurst (711th HPW/RH and Chair of the Human Systems Community of Interest) and Dr. John Tangney (ONR, Chair of the Human Systems Priority Steering Council) provided a Human Systems Overview

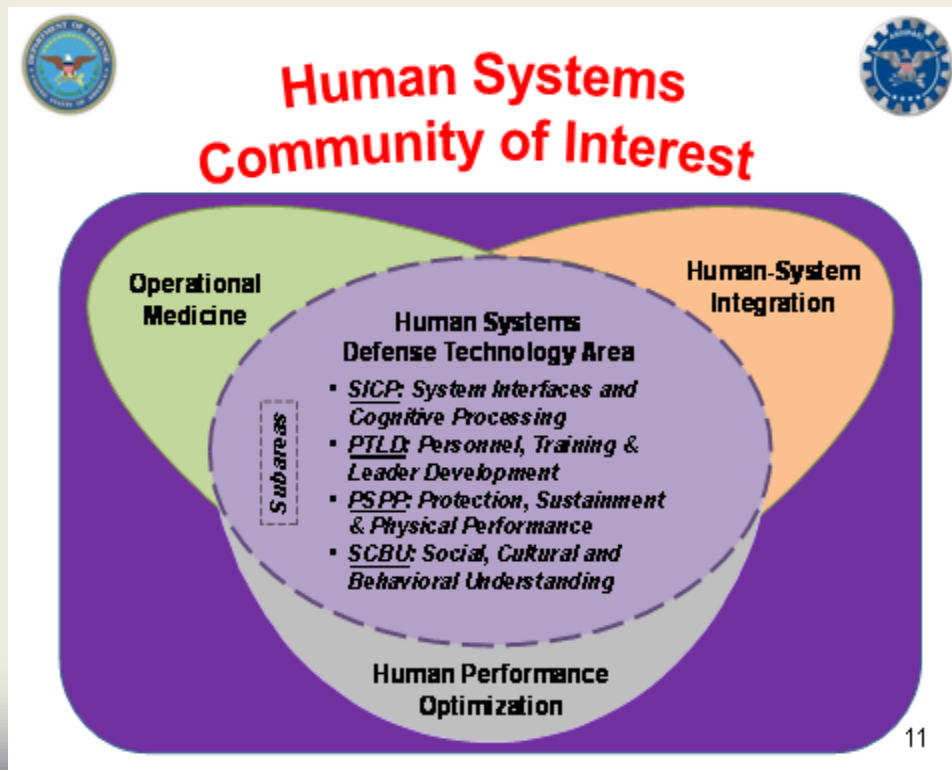
- Mr. Blackhurst discussed the HS COI, which was established on 12 June 2009. The Human Systems COI is characterized as follows:
 - Cast of thousands (scientists, engineers, managers)
 - Membership from entire DoD research community
 - Communicate on research ideas
 - Collaborate on research efforts
- Participating organizations include reps of 17 different DOD, Army, Navy and Air Force organizations.
- Main focus areas for Human Systems are:
 - System Interfaces
 - Personnel and Training
 - Social and Cultural Understanding
 - Protection and Sustainment



Plenary Session

Mr. Jack Blackhurst (711th HPW/RH) and Dr. John Tangney (ONR) (continued)

- The HS COI blends leaders, researchers and practitioners from several different areas:

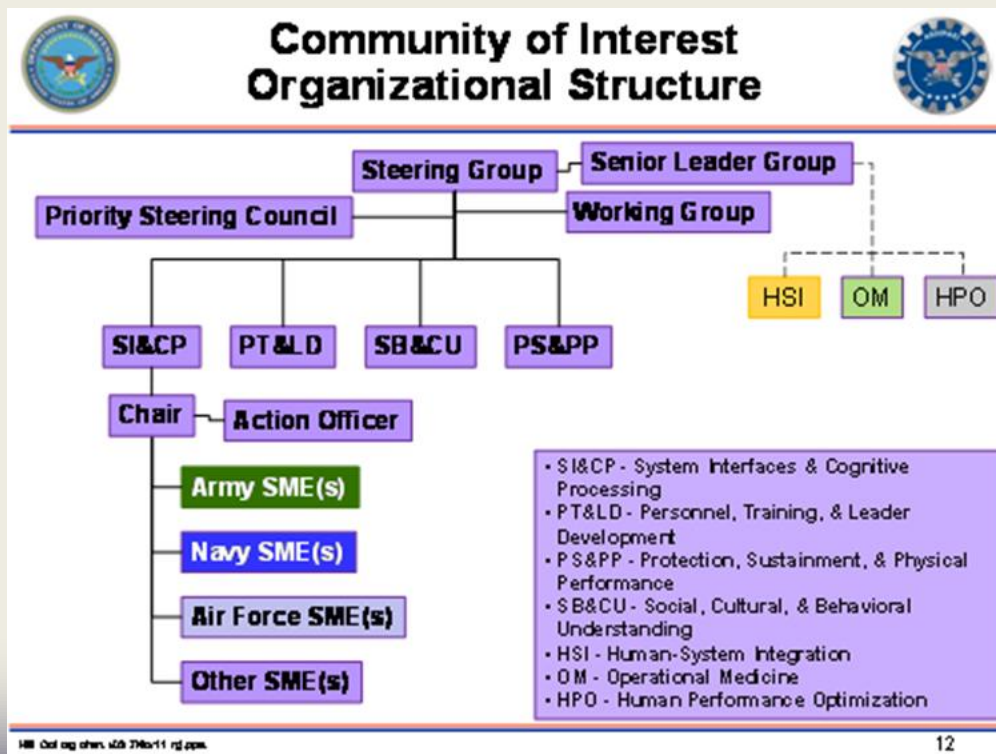




Plenary Session

Mr. Jack Blackhurst (711th HPW/RH) and Dr. John Tangney (ONR) (continued)

- The Community of Interest Organizational Structure is shown in the following figure:





Plenary Session

Dr. John Tangney (ONR) (continued)

- Human Systems Priority Steering Council established on 19 April 2011
- Major Goal:- Enhance human-machine interfaces to increase productivity, and effectiveness across a broad range of missions
- Priorities for FY13-17 are “system interfaces” and “personnel & training”
- Challenges for Training include:
 - **First Principles for Training Design**
 - Validated tools to optimize training outcomes across individuals and teams
 - Characterizing and exploiting the “science of learning” and developing valid performance measures
 - Techniques to automatically capture operationally relevant measures of performance
 - **Realistic, Adaptive and Interactive Scenario Based Training**
 - Persistent integration of real world events and content into scenarios and syllabi
 - Demonstrated and validated for the full range of warfighter capabilities reflecting recent lessons learned
 - Training that adapts to individual needs of warfighters in near real-time
 - **Persistent, Affordable, Integrated Training**
 - Mission-focused training simulations that support individual and collective training
 - Seamless, secure integration of training systems across services and coalition partners



Plenary Session

Dr. John Tangney (ONR) (continued)

- Challenges for System Interfaces include:
 - **Human-Machine Teaming**
 - Developing representation and inference frameworks to enable natural language dialogue
 - Natural, anticipatory interaction and impact on trust in autonomy
 - **Operator State Estimation & Adaptive Interfaces**
 - Developing representation and inference frameworks that capture and reason over the beliefs, goals, intentions and obligations of the human use. Iteratively learning user model via natural, multi-modal interfaces (E.g. gesture, natural language dialogue)
 - Generating and adapting estimates of user's mental & physiological states in naturalistic environments.
 - Using operator state estimation to drive interface adaption. Study co-adaptivity of interfaces and users.
 - **Decision and Performance Aiding**
 - Interfaces and decision-support technologies designed to help cope with information overload by adapting to or enhancing the capabilities of users.
 - Human-centric information systems that delivers the right information to the right person at the right time



Plenary Session

Dr. Thomas Davis (US Army Research Laboratory Human Research MANPRINT Applications to Robotic Interface Design

- The Army MANPRINT mission
 - “Provide the Army and ARL with human factors engineering leadership to ensure that Soldier performance requirements are adequately considered in technology development and system design.”
- MANPRINT is supporting ATEC by providing robotic system design and development testing support.
- Major improvements have been made to the Gladiator Tactical Unmanned Ground Vehicle and its robotic controller.



Plenary Session

Dr. Thomas Davis (US Army Research Laboratory Human Research (continued))

- The key MANPRINT challenges with regard to robotics are:

US ARMY RDECOM Key Challenges Include: **ARL**

1. Acquisition Processes Often Times are Streamlined
2. COTS Systems are becoming Best Practice
3. PM Buy-in to Customize COTS Systems/Equipment
4. Training is Often Viewed as a Mitigation for Bad Design
5. MANPRINT/HFE Often Weak or Not In Solicitation
6. Balancing T&E with Soldiers' Urgent Needs

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.



Plenary Session

Dr. Thomas Davis (US Army Research Laboratory Human Research (continued))

- Lessons learned, thus far include:
- MANPRINT must be Included in Systems Front End Analysis:
 - Analysis of system requirements by mission, conditions, and function scenarios
 - Identification of the role of Soldier verses Robot
 - Analysis of Workload and Decision Making
- MANPRINT Practitioners must become a central part of PM team to impact:
 - Solicitations for COTs Systems
 - Training design
 - Minimize training as mitigation for bad design
 - Awareness of MANPRINT/HFE Value added for Soldier/Robot system performance



Plenary Session

Mr. Eric Geiselman (Southern Ohio HFES Chapter, 711th HPW/RHCV) Human Factors and Ergonomics Society, Southern Ohio Chapter

- Mr. Geiselman (eric.geiselman@wpafb.af.mil) briefly reviewed the history of the Southern Ohio Chapter
- Initially led by Julien Christensen in May 1964
- Chapter currently has 90+ members, 10 students and 12 honorary members.
- Meetings are held every two months, on average

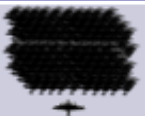




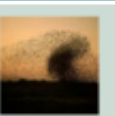
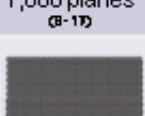



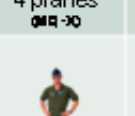
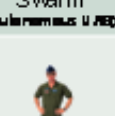








Plenary Session

LtCol Anthony Tvaryanas (711 HPW/HS)

Revisiting Tavistock: Coal Mining and Unmanned Aircraft Networks

- LtCol Tvaryanas began with a quotation from Major General John M. Custer (J-2)
 - “Every future conflict will use $1/10^{\text{th}}$ the force utilized in the previous war and 100 times the bandwidth.” **Socio-technical trajectory...**

	WWI	Vietnam	Gulf War	OIF/OEF	Near Future	Distant Future
Planes	 1,000 planes (B-17)	 30 planes (F-6)	 1 plane (F-117)	 1 plane (F-16)	 4 planes (MQ-90)	 Swarm (Glennman's U-750)
People	 10,000 crew	 60 crew	 1 crew	 1 crew	 1 crew	 Mission Commander
Targets	 1 Target	 1 Target	 2 Targets	 6 Targets	 32 Targets	 ??? Targets
Tech	Mass Aircraft	Tactical Strike	Laser Munitions	GPS Munitions	MAC	Collaboration
C2	In-the-Loop	In-the-Loop	In-the-Loop	In-the-Loop	On-the-Loop	Out-of-the-Loop
Mgmt	Active	Active	Active	Active	Responsive	Passive

War is less about force and more about information. Situation Awareness is becoming increasingly important in modern conflict



Administrative Business

- SubTAG Reports
 - Cognitive Readiness
 - 40 people attended
 - John Rice held session for May/Gibson
 - Controls & Displays
 - 42 people attended
 - Dr. Jeffrey Phillips, NAMRU-D, will be co-chair with Marianne Paulsen
 - Design: Tools and Techniques
 - 5 tools/papers were presented



Administrative Business

- SubTAG Reports (continued)
 - Human Factors Engineering/Human Systems Integration: Management and Applications
 - 4 papers presented.
 - SubTAG is updating their charter. After membership approves charter, it will be presented to Operating Board for approval
 - HFE in Extreme Environments
 - Combined session with SS/HH/Sv. Had 5 presenters altogether. SubTAG was hoping to have panel about characterization of vibration, etc. but will move that to next TAG



Administrative Business

- SubTAG Reports (continued)
 - Human Factors Standardization
 - Specific success of the subtag: Program Plan DID and update to 1472
 - Human Factors Test and Evaluation
 - Did not hold session
 - Human Modeling and Simulation
 - Held 2 sessions, 2 hours each, 41 attendees
 - Human Performance Measurement
 - 4 presentations
 - No elections, no actions, no changes



Administrative Business

- SubTAG Reports (continued)

- Training

- Beth Atkinson is chair but was unable to attend, so Marianne Paulsen ran the session
- 40 people attended
- No elections/changes. Looking for co-chairs

ACTION: Pam Savage-Knepshield noted that this subTAG and others were mostly chaired by AF and Navy. She took an Action to fill some of the open subTAG slots with Army personnel.

- Unmanned Systems

- Held two sessions on Tues and Thurs
- 15 presentations altogether



Administrative Business

- SubTAG Reports (continued)
 - Personnel Selection and Classification
 - 25 attendees, 6 presentations
 - Tried to cover hard to fill selection and classification areas
 - System Safety/Health Hazards/Survivability
 - local people presented at TAG
 - Technical Society/Industry
 - See TSI Caucus report
 - User-Computer Interaction
 - 40 people attended
 - John Taylor couldn't come, so Marianne Paulsen ran it.
 - No elections/changes. Looking for co-chairs.
- ACTION:** Army will try to fill open chair slots.



Administrative Business

- Service Caucus Reports
 - Air Force
 - 205 registered, 163 attended
 - 80 people attended the plenary, 40 people tour
 - Great support from HPW, Linda Lange and Molly Currey.
 - For future planning, other services/agencies may not have as much support or attendance
 - Army
 - 4 people attended caucus
 - The Army selected Dr. John Warner, MANPRINT, G1, as the Vice Chair. He will serve a three year term: one as Vice Chair, one as Chair, and finally one as Past Chair



Administrative Business

- Service Caucus Reports (continued)
 - Army (continued)
 - TAG-69
 - Location: Aberdeen Proving Ground, MD next April
 - Dates: Since many BRAC employees have not relocated to Aberdeen Proving Ground, but instead stay in local hotels, the Army will begin investigating potential dates for the meeting and hotel room block options
 - Theme: Integrated, multi-disciplinary nature of HSI. Potential speakers from many of the domains of HSI, i.e., occupational health, safety, etc.
 - Navy
 - 16 people attended caucus
 - Navy determined that NSWC Dahlgren would have the facilities and large number of HFE/HSI practitioners to support the next Navy hosted TAG. No concrete decision however, was made.



Administrative Business

- Service Caucus Reports (continued)
 - Technical Society/Industry
 - Summary: TSI had four speakers including Steve Harris on DoDAF/MoDAF. TSI recommends that the TAG investigate a human view in the DoDAF and potentially use the TAG as a venue to bring together the various service looks at human views in DoDAF, i.e., Bob Smillie and SPAWAR, human views
 - Teresa Alley briefed on societies that had formerly had liaisons with TAG, so TSI will use that information to recruit members
- ACTION:** Consider adding a special session to next TAG to discuss human view in DoDAF
- FAA -Did not caucus



Administrative Business

- Service Caucus Reports (continued)
 - NASA
 - Attendance: 2 NASA people were in attendance at the TAG, so held meeting at dinner. Big cuts for travel funds for NASA employees
 - Future TAG Location: Investigated potential locations per instructions at Executive Committee meeting. The best place for the TAG based on provided criteria, i.e., no perception as boondoggle, is NASA – Langley AFB
 - DHS
 - TAG 68 planning
 - Date: 5-8 Nov 2012
 - Location: William J. Hughes Technical Center
 - Tour: Transportation Security Lab (DHS) and FAA facilities



Administrative Business

- Operating Board Report
 - Introductions and Thanks
 - Major Eric Phillips ran the Operating Board meeting for Capt Schmorrow. He thanked the AF and especially Dr. Bill Kosnik for his efforts in hosting and coordinating the meeting. He thanked Dr. Jill McQuade for her support from the Proponent's office
 - Success Story Status
 - Since information about the goal and intents of the products was not widely distributed before the meeting, Eric will send out electronic form and guidance on Success Stories and how they are to be used as a tool to promote the positive contributions of HFE/HSI across the services.
- ACTION:** Eric Phillips, as Chair, will send out email to entire TAG membership to discuss intent of Success Stories document and collection of success stories, etc. including format, metrics, due dates, approval of sponsor/program.



Administrative Business

- Operating Board Report (continued)
 - Update of HFE TAG Documents
 - Roles and responsibilities Briefing
ACTION: Booz Allen Hamilton to create briefing
 - TAG Meeting Summary Briefing
ACTION: Booz Allen Hamilton to create briefing
 - Operating Structure and Policies
ACTION: Ecomm to review Op structure and Policies
 - Timeline to plan meeting
ACTION: Jill to send what she has developed to DHS/FAA folks



Administrative Business

- Operating Board Report (continued)
 - TAG-68: DHS/FAA
 - Date: November 5-8 2012
 - Location: William J. Hughes Technical Center, Egg Harbor Township/Pleasantville, NJ
 - Theme: Potentials are HP in Threat Detection, Inter-agency collaboration

ACTION: DHS/FAA to begin planning meeting
 - TAG-69: Army host
 - Date: May 2013
 - Location: Aberdeen Proving Ground
 - Tour: Aberdeen Proving Ground
 - Theme: Multi-disciplinary nature of HSI

ACTION: Army to begin looking at dates and potential hotels



Operating Board

Executive Committee

- Current Chair (Navy) CAPT Dylan Schmorrow
- Vice Chair (Air Force) Major Eric Phillips
- Past Chair (Army) Dr. Pam Savage-Knepshield
- Proponent Dr. Patrick Mason

Service Representatives

- Army Ms. Dawn Woods
- Navy LCDR Jeff Grubb
- Air Force Dr. Bill Kosnick
- NASA Ms. Cynthia Null
- FAA Dr. Thomas McCloy
- DHS Dr. Janae Lockett-Reynolds/
Mr. Darren Wilson



Operating Board (continued)

SubTAGs

Cognitive Readiness (Cognitive)

Ms. Katrina May
LT Greg Gibson

Controls & Displays (Controls)

Ms. Marianne Paulsen

Design Tools and Techniques (DTT)

Mr. Stephen Merriman
Dr. Michael Feary

Extreme Environments (Extreme)

Ms Mihriban Whitmore
Ms. Debra Clark de Tora

HFE/HSI: Management and
Application (HFE/HSI)

Maj Jeff Scott
Ms. Pamelyn Maynard



Operating Board (continued)

Human Factors in Training
(Training)

Ms. Beth Atkinson

Human Factors in Unmanned
Systems (Unmanned)

Mr. Ajoy Muralidhar

Human Factors Standardization
(Standards)

Mr. Alan Poston

Human Factors Test & Evaluation
(T&E)

Ms. Amanda Bandstra
Mr. Darren Cole

Human Modeling & Simulation
(Modeling)

Mr. John Rice
Mr. Ranjeev Mittu



Operating Board (continued)

Human Performance Measurement
(Human Performance)

LCDR Jefferson Grubb
Ms. Rahel Rudd

Personnel Selection/Classification
(Personnel)

LT Chris Foster
Dr. Hector Acosta

System Safety/Health Hazards/
Survivability (SS/HH/Sv)

Mr. John Plaga

Technical Society/Industry (TS/I)

Ms. Barbara Palmer
Mr. Stephen Merriman

User Computer Interaction (UCI)

Mr. John Taylor



Meeting Location Summary

TAG	Dates	Location	Host	Theme
TAG-64	25-28 Oct 2010	San Jose, CA	NASA Ames Research Center	Government and Industry Perspectives on Human-Systems Integration: Fostering Commercialization of Space
TAG-65	2-5 May 2011	Natick, MA	U.S. Army Natick Soldier Research Development and Engineering Center	Human Dimension as a Starting Point
TAG-66	24-27 October 2011	Vienna, VA	U.S. Navy	Outfitting for the Mission: HFE and HSI in Training and Interface Design
TAG 67	30 Aug – 3 May 2012	Wright-Patterson AFB	Air Force Research Laboratory/711 HPW	Unmanned Systems
TAG-68	5-8 Nov 2012	Egg Harbor Township, NH	DHS/FAA	TBD
TAG-69	April 2013	Aberdeen Proving Ground, MD	U.S. Army	Integrated, multi-disciplinary nature of HSI



DoD HFE TAG Point of Contact

For further information contact:

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