

# Information Sciences Department Newsletter

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Sponsor: Dan Boger  
Editor: Mark Nissen

## Publications

Barrett, F.J. and **Nissen M.E.**, "Self-Organization and -Synchronization at the Edge: Situated Action, Identity and Improvisation," *Proceedings International Command & Control Research & Technology Symposium*, Seattle, WA (June 2008).

Entin, E., Weil, S., **Hutchins, S. G.**, **Kleinman, D. L.**, Hocevar, S. P., **Kemple, W. G.**, and **Pfeiffer, K.** (2008). Two Types of ISR Commands Under Two Different Mission Intensities: Examining ESG Concepts. In Proceedings of the 13<sup>th</sup> International Command and Control Research & Technology Symposium, June 17-19, Bellevue, WA, [www.dodccrp.org](http://www.dodccrp.org).

**Hayes-Roth, F.** (2008, June). "Letters: Software Solutions." *Computer*: 6.

**Hayes-Roth, F.**, C. Blais, M. Pullen, and D. **Brutzman** (2008). How to Implement National Information Sharing Strategy. AFCEA-GMU C4I Center Symposium: Critical Issues in C4I, George Mason University, Fairfax, VA, AFCEA. [http://c4i.gmu.edu/events/reviews/2008/papers/25\\_Hayes-Roth.pdf](http://c4i.gmu.edu/events/reviews/2008/papers/25_Hayes-Roth.pdf)

**Hutchins, S. G.**, **Gallup, S. P.**, **MacKinnon, D. J.**, Schacher, G., Miller, S., Freeman, J., Dunaway, D., and Poeltler, B. (2008). Maritime Domain Awareness: Process Reengineering. Presentation to the Military Operations Research Society Symposium. US Coast Guard Academy, New London, CT, 10-12 June, [www.mors.org](http://www.mors.org), Alexandria, VA.

**Hutchins, S. G.**, **Gallup, S. P.**, **MacKinnon, D. J.**, **Schacher, G.**, Miller, S., Freeman, J., Dunaway, D., and Poeltler, B. (2008). Enhancing Maritime Domain Awareness. In Proceedings of the 13<sup>th</sup> International Command and Control Research & Technology Symposium, June 17-19, Bellevue, WA, [www.dodccrp.org](http://www.dodccrp.org).

**Hutchins, S. G.**, **Kendall, A.** (2008). Team Collaboration Used for Sensemaking to Solve Unique Problems. In Proceedings of the 8<sup>th</sup> Human Interaction with Complex Systems Conference. April 2-4, Norfolk, VA, North Carolina A&T State University, Greensboro, NC.

**Hutchins, S. G.**, and **Kendall, A.** (2008). Understanding Patterns of Team Collaboration Employed To Solve Unique Problems. Presentation to the Military Operations Research Society Symposium, US Coast Guard Academy, New London, CT, 10-12 June, [www.mors.org](http://www.mors.org), Alexandria, VA.

**Hutchins, S. G.**, **Kendall, A.**, and **Bordetsky, A.** (2008). Understanding Patterns of Team Collaboration Employed to Solve Unique Problems. In Proceedings of the 13<sup>th</sup> International Command and Control Research & Technology Symposium, June 17-19, Bellevue, WA, [www.dodccrp.org](http://www.dodccrp.org).

Huynh, T. V. and **J. S. Osmundson**, "Systems Architecting for Sustainable Delivery of Value," Proceedings of the 18<sup>th</sup> INCOSE International Symposium, Utrecht, Netherlands, June 15-19, 2008.

Huynh, T.V. and **J.S. Osmundson**, "Scrambling on Electrical Power Grids," Proceedings of the International IEEE International Conference of System of Systems Engineering, Monterey, CA, June 2-5, 2008.

Huynh, T.V. and **J.S. Osmundson**, "Sustainability Analysis in Systems Architecting for Sustainable Delivery of Value," Proceedings of the CSER (Conference on Systems Engineering Research) 2008, Los Angeles, CA, 4-5 April, 2008.

**Nissen**, M.E., Orr, R.J. and Levitt, R.E., "Streams of Shared Knowledge: Computational Expansion of Organization Theory," *Knowledge Management Research & Practice* 6:2 (2008).

**Nissen**, M.E., "Transforming Business Process Transformation with Diagnostic Knowledge-Based Tools," in: V. Grover and M. Markus (Eds.) *Business Process Transformation* Armonk, NY: Sharpe (2008), pp. 101-121.

**Oros**, C.L., "Enabling Adaptive C2 via Semantic Communication and Smart Push," AFCEA-George Mason University "Critical issues in C4I" conference held 20-21 May, 2008 at the George Mason University Johnson Center, Fairfax, VA The paper is available at <http://c4i.gmu.edu/events/reviews/2008/GMU-AFCEA-SymposiumProgram.php>.

**Oros**, C.L., "Enabling Adaptive C2 via Semantic Communication and Smart Push," *Proceedings* International Command & Control Research & Technology Symposium, Seattle, WA (June 2008).

**Osmundson, John S.**, Thomas V. Huynh and Gary O. Langford, "Emergent Behavior in Systems of Systems," Proceedings of the 18<sup>th</sup> INCOSE International Symposium, Utrecht, Netherlands, June 15-19, 2008.

Ruddy, M. and **Nissen**, M.E., "New Software Platform Capabilities and Experimentation Campaign for ELICIT," *Proceedings* International Command & Control Research & Technology Symposium, Seattle, WA (June 2008).

**Schacher**, Gordon, **MacKinnon**, Douglas J., **Hutchins**, Susan, "Quick Look: Technical Risk Reduction Limited Objective Experiment," executive level summary of Maritime Domain Awareness (MDA) lab experiment, SPAWAR San Diego, 3-5 Jun 2008.

**Schacher**, G., **MacKinnon**, D., **Hutchins**, S., **Gallup**, S., and Rousseau, D. (2008). Maritime Domain Awareness Risk Reduction Limited Objective Experiment. Naval Postgraduate School, Technical Report, NPS-IS-08-003. Monterey, CA.

## **Presentations** (not included in conference proceedings above)

**Buettner**, R.R., "GLE for the IO Community." Norfolk, VA, 7 April 2008.

**Nissen**, M.E., "Knowledge Dynamics: 11 Principles for Afloat Knowledge Managers," invited presentation, Navy Afloat Knowledge Managers Course, Dam Neck, VA (May 2008).

## **Grants and Funding**

**Gallup**, S.P., "Human Interoperability Enterprise (HIE)," PEO C4I. \$100,000.

**Gallup**, S.P., "Joint Multi-Mission Electro-Optic System (JMMES) Operational Test Agent (OTA)," NAVAIR PMA 264. \$210,000.

**Gallup**, S.P., **Roeting**, W.H., and **Wood**, B.P., "Support for Joint-Battlespace Awareness Intelligence, Surveillance, and Reconnaissance (ISR) Integration Capability (J-BAIIC)," US Joint Forces Command (USJFCOM). \$211,600 (part 4 of 4 installments).

**Gallup**, S.P., "Support of the US Joint Forces Command (USJFCOM) Biometrics Experiment as part of the Empire Challenge 08 (EC08) JFCOM - Joint-Battlespace Awareness Intelligence, Surveillance, and Reconnaissance (ISR) Integration Capability," US Joint Forces Command (USJFCOM). \$199,000.

**Kimmel**, R.A., "Joint Multi-Mission Electro-Optic System (JMMES) Operational Manager Support to C3F," for FY08/09, NAVAIR PMA 264A, \$170,000.

Major Jack L. **Koons** III, LT Chris Vann, Dr. Alex **Bordetsky**, Center for Network Innovation and Experimentation (CENETIX), TNT Field Experimentation Program/Special Ops: USSOCOM CIO Grant \$98,000

Mark **Nissen** received a \$100k DARPA grant for a seedling project on memetics.

**Oros**, C. L., "Improved Marine Corps Communications Technology Test Bed", Headquarters, USMC, C4. \$1.245M.

**Oros**, C. L., Buddenberg, R., "Distributed Operations Tactical C2", Marine Corps Warfighting Laboratory (MCWL). \$300K.

## Awards

**Carroll**, Christopher J. Lieutenant, U.S. Navy, and **Sundland**, Joseph J., U.S. Coast Guard, Thesis Advisor-**MacKinnon**, Douglas J. "Transforming Data and Metadata into Actionable Intelligence and Information within the Maritime Domain," M.S. in Information Sciences, Naval Postgraduate School, June 2008. (Awarded Distinguished Thesis Award by Information Science Department of Naval Postgraduate School).

## Significant Professional Activities

**Buettner**, R.R., represented Naval Postgraduate School at the Information Operations Education and Training Summit, Norfolk, VA, 7-11 April 2008.

Freeman, J., **Gallup**, S.P., **MacKinnon**, D., & **Hutchins**, S. (2008). Maritime Domain Awareness Workflow Model Status Report. Naval Postgraduate Technical Report, NPS-IS-08-002, Monterey, CA. 1 March 2008.

**Gallup**, S.P., **Altbaum**, D.T., **Buettner**, R.R., **Maule**, R.W., **McClain**, B.J., **McKenzie**, S.A., **Prichard**, S.M., **Roeting**, W.H., **Smith**, D.M., **Steckler**, B.J. attended Trident Warrior 08 Final Planning Conference, San Diego, CA, 1-3 April 2008.

**Gallup**, S.P., **Irvine**, N.J., **Jensen**, J.J., **Schacher**, G., **Utschig**, J.M., **Wood**, B.P., hosted and attended the Joint Multi-Mission Electro-Optic System (JMMES) Operational Manager Integrated Planning Team (IPT) in support of the Joint Capability Technology Demonstration (JCTD) effort, Monterey, CA, 20-21 May 2008.

**Gallup**, S.P., **Altbaum**, D.T., **Maule**, R.W., **McClain**, B.J., **McKenzie**, S.A., **Prichard**, S.M., **Smith**, D.M., participated in Trident Warrior 08 Exercise embarked in USS BON HOMME RICHARD (LHD 6) and ashore at San Diego, CA and Honolulu, HI, 16-27 June 2008.

Bill **Kemple** and Mark **Nissen** served as Organizational Issues **Track Co-Chairs for the** International Command & Control Research & Technology Symposium, Seattle, WA (June 2008).

**Hayes-Roth**, F. (2008). Personal portal and secure information exchange. US Patent 7,376,652.

**MacKinnon**, D.J. participated in the Maritime Domain Awareness (MDA) Technical Risk Reduction Limited Objective Experiment (TRRLOE), San Diego, CA 3-5 June 2008.

LtCol Carl **Oros**, USMC was the track chair for the plenary paper session "Smart Push Using SOA" at the AFCEA-George Mason University "Critical issues in C4I" conference held 20-21 May, 2008 at the George Mason University Johnson Center, Fairfax, VA (see: <http://www.afcea.org/events/gmuc4i/>). Other NPS colleagues in attendance were Chris Gunderson, Rex Buddenberg (IS), and Curt Blais (MOVES).

LtCol **Oros** and thesis research students participated in the Tactical network Topology (TNT) 08-3 field experiments in conjunction with HQMC C4 and MCWL sponsored research focused on testing advanced tactical IP network radios.

**Roeting**, W.H., **Altbaum**, D.T., **Irvine**, N.J., **MacKinnon**, D.J., **Prichard**, S.M., **Utschig**, J.M., **Wood**, B.P., attended Empire Challenge 08 Final Planning Conference in support of Joint-Battlespace Awareness Intelligence, Surveillance, and Reconnaissance (ISR) Integration Capability (JBAIIC) and Tasking, Processing, Exploitation and Dissemination (TPED) Management programs, Chantilly, VA, 5-9 May 2008.

**Roeting**, W.H., **Wood**, B.P., attended Empire Challenge 09 Concept Development Conference (CDC) in support of Joint-Battlespace Awareness Intelligence, Surveillance, and Reconnaissance (ISR) Integration Capability (JBAIIC) and Tasking, Processing, Exploitation and Dissemination (TPED) Management programs, Chantilly, VA, 2-4 June 2008.

**Roeting**, W.H., **Utschig**, J.M., **Wood**, B.P., conducted Joint Multi-Mission System Module (JMSM) set up, asset delivery, and testing in support of Joint-Battlespace Awareness Intelligence, Surveillance, and Reconnaissance (ISR) Integration Capability (JBAIIC) and Tasking, Processing, Exploitation and Dissemination (TPED) Management programs, NAWS China Lake, CA 16-27 June 2008.

**Schacher**, G., **MacKinnon**, D., **Hutchins**, S., **Gallup**, S., and Rousseau, D. (2008). Maritime Domain Awareness Risk Reduction Limited Objective Experiment. Naval Postgraduate School, Technical Report, NPS-IS-08-003. Monterey, CA.

**Utschig**, J.M., hosted and attended the Empire Challenge 09 Architecture Working Group meeting in support of Joint-Battlespace Awareness Intelligence, Surveillance, and Reconnaissance (ISR) Integration Capability (JBAIIC) and Tasking, Processing, Exploitation and Dissemination (TPED) Management programs, Monterey, CA, 14-15 May 2008.

## PhD Student Accomplishments

**Hudgens**, B.J. and Bordetsky A.B., "Feedback Models for Collaboration and Trust in Crisis Response Networks," *Proceedings of the Thirteenth International Command and Control Research and Technology Symposium* (June 2008). [Best track paper]

Dew, N. and **Hudgens**, B.J., "The Evolving Private Military Sector: A Survey," *Proceedings of the Fifth Annual Acquisition Research Symposium* (May 2008).

**Koons**, J.L., **Bekatoros**, N. and **Nissen** M.E., "C2 for Computer Networked Operations: Using Computational Experimentation to Identify the Highest-Performance Organizational Configurations," *Proceedings International Command & Control Research & Technology Symposium*, Seattle, WA (June 2008).

**Koons**, J.L., "Knowledge Flow Mesh and its Dynamics: A Decision Support Environment," *Proceedings 13<sup>th</sup> International Command and Control Research Symposium*, Bellevue, Washington (June 2008). Best Student Paper Award, Architectures Track. Nominated for Best Student Paper overall.