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Front Matter: Volume 6962

, "Front Matter: Volume 6962," Proc. SPIE 6962, Unmanned Systems Technology X, 696201 (2 May 2008); doi: 10.1117/12.798097

SPIE.

Event: SPIE Defense and Security Symposium, 2008, Orlando, Florida, United States

PROCEEDINGS OF SPIE

Unmanned Systems Technology X

**Grant R. Gerhart
Douglas W. Gage
Charles M. Shoemaker**
Editors

**17–20 March 2008
Orlando, Florida, USA**

Sponsored and Published by
SPIE

Volume 6962

Proceedings of SPIE, 0277-786X, v. 6962

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Author(s), "Title of Paper," in *Unmanned Systems Technology X*, edited by Grant R. Gerhart, Douglas W. Gage, Charles M. Shoemaker, Proceedings of SPIE Vol. 6962 (SPIE, Bellingham, WA, 2008) Article CID Number.

ISSN 0277-786X

ISBN 9780819471536

Published by

SPIE

P.O. Box 10, Bellingham, Washington 98227-0010 USA

Telephone +1 360 676 3290 (Pacific Time) · Fax +1 360 647 1445

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Printed in the United States of America.

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Contents

ix	Conference Committee
xiii	Introduction

SESSION 1 PERCEPTION

6962 02	Detecting personnel around UGVs using stereo vision (Invited Paper) [6962-01] M. Bajracharya, B. Moghaddam, A. Howard, L. H. Matthies, Jet Propulsion Lab. (USA)
6962 03	All-weather perception for small autonomous UGVs [6962-02] B. Yamauchi, iRobot Corp. (USA)
6962 04	Monocular visual ranging [6962-03] G. Witus, S. Hunt, Turing Associates, Inc. (USA)
6962 05	A robust real-time structure from motion for situational awareness and RSTA [6962-04] M. Shim, S. Yilma, K. Bonner, General Dynamics Robotic Systems (USA)
6962 06	Performance analysis for stable mobile robot navigation solutions [6962-05] C. Scrapper, R. Madhavan, S. Balakirsky, National Institute of Standards and Technology (USA)
6962 07	Detecting and tracking moving humans from a moving vehicle [6962-06] B. A. Bodt, Army Research Lab. (USA); R. Camden, L3 Services Group (USA)
6962 08	Analysis of laser-ranging technology for sense and avoid operation of unmanned aircraft systems: the tradeoff between resolution and power [6962-07] G. Euliss, A. Christiansen, R. Athale, The MITRE Corp. (USA)
6962 09	Track history development by combining watermarking and target tracking [6962-08] B. G. Mobasser, P. Krishnamurthy, Villanova Univ. (USA)
6962 0A	Automatic improvement of x-ray object recognition [6962-09] S. Sheraizin, S. Itzikovitz, College of Management (Israel)

SESSION 2 INTELLIGENT AND AUTONOMOUS BEHAVIORS I

6962 0C	Distributed pheromone-based swarming control of unmanned air and ground vehicles for RSTA [6962-11] J. A. Sauter, R. S. Mathews, A. Yinger, NewVectors (USA); J. S. Robinson, J. Moody, Augusta Systems, Inc. (USA); S. Riddle, Naval Air Systems Command (USA)
6962 0D	Small robot autonomy in an integrated environment [6962-12] B. J. O'Brien, S. H. Young, Army Research Lab. (USA)

SESSION 3 INTELLIGENT AND AUTONOMOUS BEHAVIORS II

- 6962 0F **Learned trafficability for UGVs: inferring geometry from imagery** [6962-14]
G. S. Broten, D. Mackay, B. Digney, Defence Research and Development Canada (Canada)
- 6962 0G **PointCom: semi-autonomous UGV control with intuitive interface** [6962-15]
M. M. Rohde, V. E. Perlin, Quantum Signal LLC (USA); K. D. Iagnemma, Massachusetts Institute of Technology (USA); R. M. Lupa, S. M. Rohde, Quantum Signal LLC (USA); J. Overholt, G. Fiorani, U.S. Army TARDEC (USA)
- 6962 0H **Adaptive learning applied to terrain recognition** [6962-16]
R. E. Karlsen, U.S. Army TARDEC (USA); G. Witus, Turing Associates, Inc. (USA)
- 6962 0I **Supervisory controlled operations of UAVs for tracking and surveillance of vehicle targets (SCOUTS)** [6962-17]
A. Fischer, N. Denny, 21st Century Systems, Inc. (USA)

SESSION 4 INTELLIGENT AND AUTONOMOUS BEHAVIORS III

- 6962 0J **Practical problems in sliding scale autonomy: a case study** [6962-19]
S. Lenser, C. Jones, iRobot Corp. (USA)
- 6962 0K **Tele-operator assistance system for small rovers** [6962-20]
D. Eck, K. Schilling, Univ. Würzburg (Germany) and Steinbeis Transferzentrum Angewandte Rechner und Softwaretechnologien (Germany)

SESSION 5 MOBILE MANIPULATORS

- 6962 0L **Mobile manipulation: a challenge in integration** [6962-21]
C. Anderson, B. Axelrod, J. P. Case, J. Choi, M. Engel, G. Gupta, F. Hecht, J. Hutchinson, N. Krishnamurthi, J. Lee, H. D. Nguyen, R. Roberts, J. G. Rogers, A. J. B. Trevor, H. I. Christensen, C. Kemp, Georgia Institute of Technology (USA)
- 6962 0M **Low-cost semi-autonomous manipulation technique for explosive ordnance disposal robots** [6962-22]
A. Czop, L3 Titan Corp. (USA); M. J. Del Signore, K. Hacker, Naval Explosive Ordnance Disposal Technology Div. (USA)
- 6962 0N **Intelligent modular manipulation for mobile robots** [6962-23]
J. Culbertson, RE2, Inc. (USA)
- 6962 0O **Computer assisted robotic examination swab sampling (CARESS)** [6962-24]
S. Hunt, G. Witus, Turing Associates, Inc. (USA); D. Ellis, Wayne State Univ. (USA)
- 6962 0P **Development and enhancement of mobile robot arms for EOD applications** [6962-25]
M. Berkemeier, E. Poulson, E. Aston, J. Johnston, B. Smith, Autonomous Solutions, Inc. (USA)

- 6962 0Q **Operator control interface configuration for line-of-sight mobile manipulation** [6962-26]
I. Lynn, Colorado School of Mines (USA); J. Will, Valparaiso Univ. (USA); K. L. Moore, Colorado School of Mines (USA)
- 6962 0R **Software control of a video and sensor equipped smart robotic arm for checkpoint vehicle inspection** [6962-27]
J. H. Bosworth, Smart Robots, Inc. (USA)
- 6962 0S **Door breaching robotic manipulator** [6962-28]
E. Schoenfeld, iRobot Corp. (USA); L. Parrington, S. von Muehlen, Honeybee Robotics (USA)
- 6962 0T **Remote chemical biological and explosive agent detection using a robot-based Raman detector** [6962-29]
C. W. Gardner, R. Wentworth, P. J. Treado, ChemImage Corp. (USA); P. Batavia, Applied Perception, Inc. (USA); G. Gilbert, U.S. Army Telemedicine and Advanced Technology Research Ctr. (USA)
- 6962 0U **Visual interfaces for operation of non-line-of-sight mobile manipulation** [6962-30]
J. Will, Valparaiso Univ. (USA); I. Lynn, K. L. Moore, Colorado School of Mines (USA)

SESSION 6 SPECIAL TOPICS SESSION I: JOINT SESSION WITH CONFERENCE 6981

- 6962 0W **FCS UGV safe operations** [6962-32]
S. Fish, J. Ruedin, Science Applications International Corp. (USA); M. Perschbacher, RovnoTech (USA); J. Bares, Carnegie Mellon Univ. (USA)
- 6962 0X **Near-Nash targeting strategies for heterogeneous teams of autonomous combat vehicles** [6962-33]
D. G. Galati, Carnegie Mellon Univ. (USA); M. A. Simaan, Univ. of Pittsburgh (USA)
- 6962 0Y **Adaptive collaborative control of highly redundant robots** [6962-34]
D. A. Handelman, American Android Corp. (USA)

SESSION 7 SPECIAL TOPICS SESSION II: JOINT SESSION WITH CONFERENCE 6981

- 6962 0Z **Skid steer fuel cell powered unmanned ground vehicle (Burro)** [6962-35]
J. S. Meldrum, C. A. Green, Michigan Technological Univ. (USA)
- 6962 10 **Hands-free device control using sound picked up in the ear canal** [6962-36]
S. R. Chhatpar, L. Ngia, C. Vlach, D. Lin, C. Birkhimer, A. Juneja, T. Pruthi, Think-A-Move, Ltd. (USA); O. Hoffman, T. Lewis, iRobot Corp. (USA)
- 6962 12 **Low-cost robotic arm control** [6962-38]
J. R. Rogers, U.S. Military Academy (USA)

SESSION 8 SELF-ORGANIZING, COLLABORATIVE UNMANNED ISR ROBOTIC TEAMS II: JOINT SESSION WITH CONFERENCE 6981

- 6962 15 **Multi-objective optimization to support mission planning for constellations of unmanned aerial systems** [6962-40]
S. Tenenbaum, D. Stouch, Charles River Analytics, Inc. (USA); K. McGraw, U.S. Army ERDC CERL (USA); T. Fichtl, Charles River Analytics, Inc. (USA)
- 6962 16 **UAV-UGV collaboration with a PackBot UGV and Raven SUAV for pursuit and tracking of a dynamic target** [6962-41]
C. Cheung, iRobot Corp. (USA); B. Grocholsky, Carnegie Mellon Univ. (USA)
- 6962 17 **A novel real-time health monitoring system for unmanned vehicles** [6962-42]
D. C. Zhang, L. Ouyang, P. Qing, I. Li, Acellent Technologies, Inc. (USA)
- 6962 18 **Modeling and simulation of reliability of unmanned intelligent vehicles** [6962-45]
H. Singh, A. M. Dixit, A. Mustapha, Wayne State Univ. (USA); K. Singh, Indian Institute of Technology Roorkee (India); K. K. Aggarwal, Guru Gobind Singh Indra Pratha Univ. (India); G. R. Gerhart, U.S. Army TARDEC (USA)

SESSION 9 MOBILITY AND NAVIGATION

- 6962 19 **Design of a highly maneuverable wheeled mobile robot** [6962-47]
M. Udengaard, K. Iagnemma, Massachusetts Institute of Technology (USA)
- 6962 1A **Remote operation of the Black Knight unmanned ground combat vehicle** [6962-48]
J.-S. Valois, H. Herman, J. Bares, D. P. Rice, Carnegie Mellon Univ. (USA)
- 6962 1B **Modeling, validation and analysis of a Whegs robot in the USARSim environment** [6962-49]
B. K. Taylor, Case Western Reserve Univ. (USA); S. Balakirsky, E. Messina, National Institute of Standards and Technology (USA); R. D. Quinn, Case Western Reserve Univ. (USA)
- 6962 1C **Path planning for robotic vehicles using generalized Field D*** [6962-50]
L. Sapronov, A. Lacaze, Robotic Research LLC (USA)
- 6962 1D **Cognitive integration of aerial and ground views in remote vehicle operations** [6962-51]
R. A. Chadwick, New Mexico State Univ. (USA); D. J. Gillan, North Carolina State Univ. (USA)
- 6962 1E **Designing low cost autonomous robots in unknown environments** [6962-52]
A. T. Alouani, A. M. Sri, Tennessee Technological Univ. (USA)
- 6962 1F **Design of a bipedal walking robot** [6962-53]
J. Pratt, Institute for Human and Machine Cognition (USA); B. Krupp, Yobotics, Inc. (USA)
- 6962 1G **Mobility prediction for unmanned ground vehicles in uncertain environments** [6962-54]
G. Kewlani, K. Iagnemma, Massachusetts Institute of Technology (USA)
- 6962 1H **Autonomous terrain parameter estimation for wheeled vehicles** [6962-55]
L. E. Ray, Dartmouth College (USA)

SESSION 10 GOVERNMENT SESSION

- 6962 1J **Cooperative robotics: bringing autonomy to explosive ordnance disposal robots** [6962-57]
M. J. Del Signore, A. Czop, K. Hacker, Naval Explosive Ordnance Disposal Technology Div. (USA)
- 6962 1M **From the laboratory to the soldier: providing tactical behaviors for Army robots** [6962-60]
D. G. Knichel, U.S. Army (USA); D. J. Bruemmer, Idaho National Lab. (USA)
- 6962 1N **Convoy Active Safety Technologies Warfighter Experiment I** [6962-61]
E. Schoenherr, B. L. Theisen, U.S. Army TARDEC (USA); A. Animashaun, J. Davis, Army Research Lab. (USA); C. Day, U.S. Army Combined Arms Support Command (USA)

SESSION 11 STANDARDS AND METRICS

- 6962 1O **Development of a virtual manufacturing framework: from end-user performance requirements to robot competitions** [6962-62]
S. Balakirsky, National Institute of Standards and Technology (USA); R. Madhavan, National Institute of Standards and Technology (USA) and Oak Ridge National Lab. (USA); C. Scrapper, National Institute of Standards and Technology (USA)
- 6962 1P **Soldier universal robot controller** [6962-63]
J. Hyams, P. Batavia, E. Liao, A. Somerville, Applied Perception, Inc. (USA)
- 6962 1Q **Performance evaluation of cost-based vs. fuzzy-logic-based prediction approaches in PRIDE** [6962-64]
Z. Kootbally, C. Schlenoff, R. Madhavan, S. Foufou, National Institute of Standards and Technology (USA)
- 6962 1R **Spatial ontologies for tactical behaviors** [6962-65]
C. W. BouSaba, A. C. Esterline, A. Homaifar, F. Fatehi, North Carolina A&T State Univ. (USA)
- 6962 1S **An ontology for tactical behaviors derived from verb frames** [6962-66]
A. C. Esterline, C. W. BouSaba, North Carolina A&T State Univ. (USA)
- 6962 1T **libdrdc: software standards library** [6962-67]
D. Erickson, Defence Research and Development Canada (Canada); T. Peng, Scientific Instruments Ltd. (Canada)

POSTER SESSION

- 6962 1U **Development of an extendable arm and software architecture for autonomous and tele-operated control for mobile platforms** [6962-69]
Y.-S. Li, Wayne State Univ. (USA); S. Hunt, Turing Associates, Inc. (USA); C. Popovici, S. Walter, Wayne State Univ. (USA); G. Witus, Turing Associates, Inc. (USA); R. D. Ellis, G. Auner, A. Cao, A. Pandya, Wayne State Univ. (USA)

- 6962 1V **Weighted singularity-robust inverse with criterion function optimization of redundant mobile manipulators in 3D space with defense applications** [6962-70]
R. Alqasemi, R. Dubey, Univ. of South Florida (USA)
- 6962 1W **Adaptive control of a wheelchair-pushing holonomic robot subject to input constraints** [6962-71]
N. S. Methil, R. Mukherjee, Michigan State Univ. (USA)
- 6962 1X **Behavior generation strategy of artificial behavioral system by self-learning paradigm for autonomous robot tasks** [6962-74]
E. Dağlarlı, H. Temeltaş, Istanbul Technical Univ. (Turkey)
- 6962 1Y **Integrated RF modules for cooperative UGV/UAV tandems** [6962-75]
A. K. Mitra, L. Westbrook, Air Force Research Lab. (USA); J. Corgan, Corgan Enterprises (USA); S. Young, J. Nagar, Air Force Research Lab. (USA); T. Bariagaber, Tennessee State Univ. (USA)

Author Index

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Robert M. Wilcox, The Tolliver Group (USA)
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Brian M. Yamauchi, iRobot Corporation (USA)

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- 1 Perception
Magnús S. Snorrason, Charles River Analytics, Inc. (USA)
Larry H. Matthies, Jet Propulsion Laboratory (USA)
- 2 Intelligent and Autonomous Behaviors I
Robert E. Karlsen, U.S. Army TARDEC RDECOM (USA)
Brian M. Yamauchi, iRobot Corporation (USA)
- 3 Intelligent and Autonomous Behaviors II
Robert E. Karlsen, U.S. Army TARDEC RDECOM (USA)
Brian M. Yamauchi, iRobot Corporation (USA)
- 4 Intelligent and Autonomous Behaviors III
Robert E. Karlsen, U.S. Army TARDEC RDECOM (USA)
Brian M. Yamauchi, iRobot Corporation (USA)

- 5 Mobile Manipulators
Kevin L. Moore, Colorado School of Mines (USA)
Gary Witus, Turing Associates, Inc. (USA)
- 6 Special Topics Session I
Scott Fish, The University of Texas at Austin (USA)
Douglas W. Gage, XPM Technologies (USA)
- 7 Special Topics Session II
Scott Fish, The University of Texas at Austin (USA)
Douglas W. Gage, XPM Technologies (USA)
- 8 Self-Organizing, Collaborative Unmanned ISR Robotic Teams II
Nahid N. Sidki, Science Applications International Corporation (USA)
Venkataraman Sundareswaran, Teledyne Scientific Company (USA)
George Vachtsevanos, Georgia Institute of Technology (USA)
- 9 Mobility and Navigation
Karl D. Iagnemma, Massachusetts Institute of Technology (USA)
Mel W. Torrie, Autonomous Solutions, Inc. (USA)
- 10 Government Session
Jonathan A. Bornstein, Army Research Laboratory (USA)
Charles M. Shoemaker, General Dynamics Robotic Systems (USA)
Jeffrey J. Jaczkowski, U.S. Army Tank-Automotive and Armaments Command (USA)
- 11 Standards and Metrics
Elena R. Messina, National Institute of Standards and Technology (USA)
Stuart H. Young, Army Research Laboratory (USA)

Introduction

The Unmanned Systems Technology X Conference consisted of ten sessions during a three-and-a-half-day time period devoted to current robotic technologies relevant to commercial and military applications. The four sessions on Wednesday were Self-Organizing Collaborative ISR Robotic Teams I and II and Special Topics I and II were joint sessions with Conference 6981, Defense Transformations and Network-Centric Systems. Several papers in the joint session discussed UGV/UAV/manned vehicle collaborative operations on the future battlefield, describing in some detail the role of network-centric warfare in a collaborative environment.

The Perception session contained a number of papers on novel sensor technologies for positive and negative obstacle detection, avoidance, and negotiation in complex terrain. There was considerable discussion on the sensor performance requirements necessary for autonomous navigation in difficult terrain mobility environments as well as motion tracking and situational awareness for UAV systems. Tuesday contained sessions titled Intelligent and Autonomous Behaviors I and II along with Mobile Manipulators. The latter session discussed a number of topics including the synergism of manipulator arms on highly mobile platforms and their impact upon the design of intelligent behavior algorithms for complex tasks. Other technology topics ranged from bio-inspired sensor paradigms, ultrawideband radar, GPS and dead reckoning localization applications systems, LADAR/LIDAR, and vision-based imaging systems. The Government session contained papers from U.S. and Canadian authors discussing current robotics technology programs including subjects such as cooperative robotics, autonomous systems, tactical behaviors, and EOD robots.

Other sessions examined current topics on safety issues for UxVs; standards, metrics, and architectures related to urban search and rescue robots; and intelligent behaviors and learning. The poster session contained six additional papers on a variety of subjects including mobility analysis of robotic platforms, self learning strategies, and EOD dexterous mobile arm manipulators. Two invited papers of special interest were: "Perspectives on the DARPA urban challenge" by Doug Gage and "Robotics technology development at GDRS" by Chuck Shoemaker.

We hope you enjoy these proceedings and are able to attend our conference next year.

Grant R. Gerhart
Douglas W. Gage
Charles M. Shoemaker