Mortensen, Gerald E. Research Engineer
Defense Electronics Engineering Division

Education

Syracuse University	Graduate Studies, EE, 1984-date
State University of New York, Potsdam, NY	MA, Mathematics, 1984
	BA, Mathematics and Computer Science, 1984

Experience

Syracuse Research Corporation 1984-date

Mr. Mortensen has been involved in a variety of sponsored projects in the areas of signal processing, target identification, electromagnetics, and simulation. He has served as program manager on a number of such projects.

From 1985 to 1989 Mr. Mortensen was the project engineer on an inverse synthetic aperture radar (ISAR) simulation project. A real-time ISAR image simulation was developed for use in training Navy personnel to identify ship targets using ISAR imagery. The simulation utilized real-time computer graphics and radar cross-section prediction techniques.

Mr. Mortensen also served as project engineer on a synthetic aperture radar (SAR) simulation effort. Techniques for simulating SAR images of the ground were developed. The simulation utilized Defense Mapping Agency (DMA) feature (DFAD)and terrain elevation (DTED) databases .

Mr. Mortensen was involved in a project under which techniques for high-resolution imaging of aircraft targets using coherent millimeter wave (Ka band) radar data were developed. High quality imagery was produced with radar dwell times under one second.

On an effort for Rome Labs (then RADC), Mr. Mortensen was the program manager for a target identification project which utilized two-dimensional coherent S-band radar imagery.

For the last three years Mr. Mortensen has been contributing to a radar cross section prediction effort. New algorithms are being developed for use with the Method of Moments technique. His involvement in this work has included contributions in the areas of electromagnetic analysis, numerical analysis, high-performance computing, system analysis, and scientific visualization.

Mr. Mortensen is currently serving as the project engineer on another RCS prediction effort. The goal of this effort is to utilize the concepts of sampling and system theory to significantly improve upon the computational performance of current Finite Difference Time Domain (FDTD) implementations.

In 1984-1985, Mr. Mortensen served as system manager of the corporation's VAX-11/785 computer facility. He also has system administration and programming experience on Sun and SGI

graphics workstations, and programming experience on Cray Y-MP supercomputers. He is experienced with a variety of operating systems and networking facilities, including VMS, DOS, UNIX (BSD and System V), Windows, X Windows, Ethernet, DECnet, and TCP/IP. He is conversant in several programming languages including FORTRAN and C, and several graphics languages including Plot10 and IGL.

Publications

"Inverse Synthetic Aperture Radar (ISAR) Simulation for Operator Training", Proceedings of 1989 Tri-Service Combat Identification Systems Conference (CISC-89), 13-15 July 1989, Paper is Confidential, Proceedings are Secret.

"Development of a Bandlimited Basis Set for Thin Wire Method of Moments Scattering Problems", G. Mortensen, C. Cha, 9th Annual Review of Progress in Applied Computational Electromagnetics, 22-26 March 1993

"A Three-Dimensional Method of Moments Surface Scattering Code Using a Sampling Theoretic Current Expansion", G. Mortensen, C. Cha, T. Krauss; to be presented at 1993 IEEE APS/URSI Symposium, June 1993.

"The Spatial Bandwidth of Induced Currents and Implications in the Method of Moments", G. Mortensen, C. Cha, D. Wilkes, to be presented at 1993 IEEE APS/URSI Symposium, June 1993.

Mr. Mortensen has authored an number of technical reports and technical notes. The more significant unclassified titles are listed below:

"Real-Time Analysis of ISAR Simulation", SRC TR 86-1425, June 1986

"ISAR Simulation Feasibility" (with H. Oestricher) SRC TR 86-1424, August 1986

"Real-Time ISAR Simulation" (with J. Wilson), SRC TR 87-1274, June 1987

"The Generation of Ship Motions in Irregular Seaway" SRC TN 87-1240, June 1987

"Final Report: Faculty Research Consultant on F/A-18 Air-to-Ground Modes" (with J. Wilson), SRC TR 87-1415, September 1987

"Inverse Synthetic Aperture Radar (ISAR) for Operator Training", SRC TD 97-1553, August 1988

"Final Report: Simulation of ISAR for Battle Damage Assessment", SRC TR 88-1336, August 1988

"Doppler Beam Sharpening / Synthetic Aperture Radar (DBS/SAR) Simulation", SRC TR 89-1240

"Real-Time Multisensor Algorithm Experiment", SRC TR 90-1429, November 1990