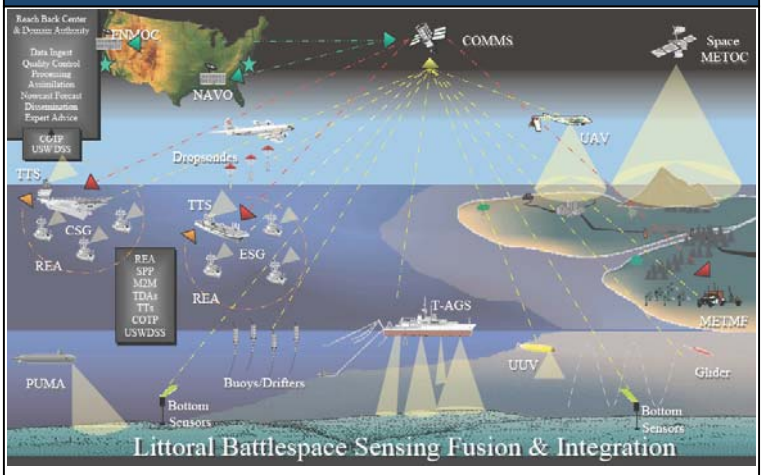
DEPARTMENT OF ELECTRICAL ENGINEERING

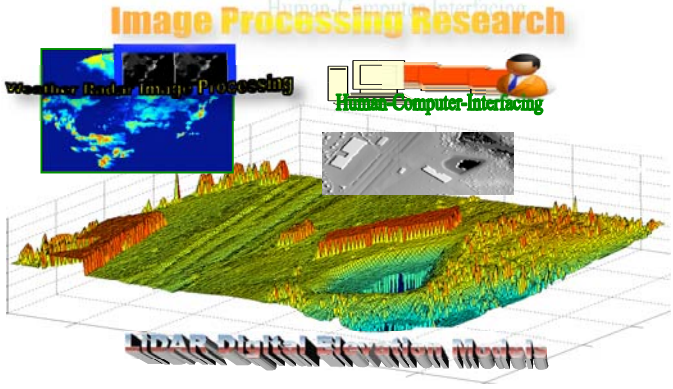
Information Fusion & Target Information Processing



Information Fusion & Target Information Processing – combining information in multiple entities with the purpose of target inference under various uncertainties – is a research focus of the EE department and the Information and Systems Technology Research Center. The research team led by Dr. X. Rong Li is an internationally recognized leader in this area and has made numerous highly regarded contributions. Its research has been funded by U.S. Navy, Army, Air Force, NASA, State of Louisiana, etc. A sampling of its past and ongoing major projects includes: *Information Fusion for Target Inference*, *Target Information Processing: A Joint Decision and Estimation Approach*, *Coordinated UV Routing in Variable Environments*, *Littoral Battlespace Sensor Fusion and Integration Framework*, and *Aircraft Safety: Control Upset Management*.

NEW COMPUTER CLUSTER

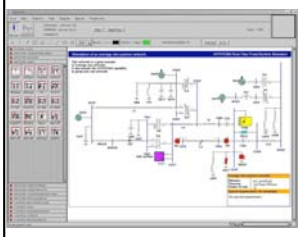
A new computer cluster expansion is under development by the EE department to provide increased computing power useful for high-demand scientific-computing applications in the College of Engineering. The cluster will be upgraded to over 180 AMD Opteron 2GHz cores utilizing multi-terabyte storage and running under 64 bit Linux ROCKS cluster distribution. The system will be fully racked with a dedicated server to manage accounts and a dedicated node to handle information storage. A workstation will compile and parallelize programs in the 64-bit environment. The existing cluster has been used, for example, to run simulations for the Corps of Engineers to predict storm surge. The high-performance computing of its new cluster will improve the region's research capabilities in the wake of Katrina.



Power Systems Engineering

Intelligent Real Time Systems Modeling and Simulation

Real Time Operation of Intelligent and Reliable Power Systems are an integral part of modern, national and international grids in the 21st century. Research focuses on development of models and simulation tools for Smart Grids applicable to Large Scale Power Systems.



Optimal Algorithms for Regulated and Deregulated Electric Markets

Transmission Congestion Contracts, Financial Transmission Rights, and optimal algorithms for Spot Pricing of electricity are emerging features of deregulated Power Markets. Research focuses on development of optimal algorithms for maximizing profits while ensuring regulated and deregulated system reliability.

Integration of Alternative Energy Sources for System Energy Efficiency

Alternative sources of electricity that are environmentally acceptable and cost-efficient shall be part of electric systems in this century. Research focuses on resolving issues related to integration of the new sources for production of electricity with the existing electric systems while maintaining secure and profitable operations.

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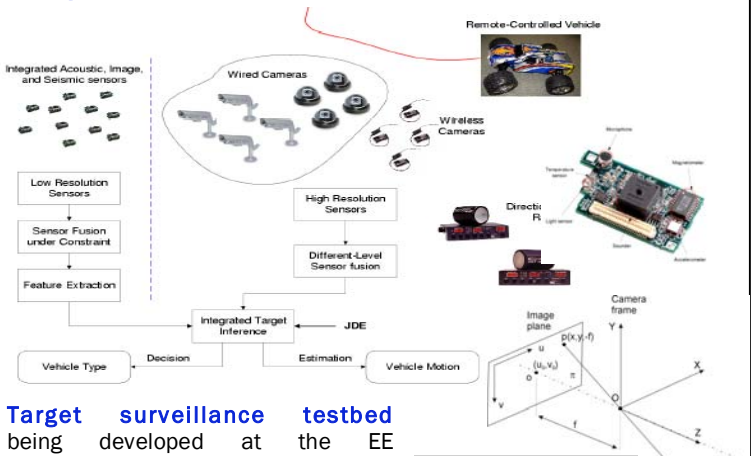
Target Surveillance Testbed



Target surveillance testbed being developed at the EE department is a test bed for multi-vehicle ground target detection, recognition, and tracking. It is primarily used for R&D of integrated sensing and data fusion algorithms. It can enhance tracking & discrimination capability from research projects and allow new research themes in target information processing, integrated sensing and data fusion, network control, communication and computing systems, etc.