



Infrared IAC (IRIA)

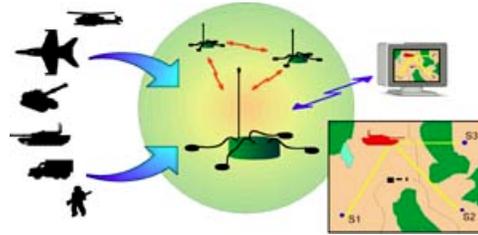
IRIA

Story 1

Story 2

Expanding the Scope of Military Sensing: Electric and Magnetic Field Sensing

The IRIA Center has long been a primary source of information on the use of infrared and electro-optical devices in Military sensing. Our national strategy now requires the Armed Services to exercise full spectrum dominance of the battlefield by achieving information superiority over potential adversaries. In this environment, the role of individual sensors (or sensor types) is subordinate to the use of multiple, fused-sensor modalities in a networked environment. The classical sensor-based paradigm has been supplemented by merging the universe of sensors (including counter-sensor) and fusion technologies.



IRIA has been implementing this approach for several years. This year, IRIA expanded into a most promising area of Military sensing with the inclusion of electric and magnetic field sensing. While much of the effort in these areas is still in the research and development phase, eventual implementation and fielding of electric and magnetic field sensing devices promise to support many Military functions such as counter mine, targeting, and surveillance.

[Continued on Story 1](#)

Timely "Mine Detection SOAR" Supports War Effort

The use of mines has long been an intrinsic part of land warfare. A less studied aspect is the detection and disabling of these mines once hostilities cease. However, recently the U.S. began a number of programs designed to mitigate the mine threat. The Infrared Information Analysis Center has collected and analyzed these efforts and produced a state-of-the-art report on the Detection of Mines and Minefields. This timely report is applicable to numerous mine detection problems, such as that facing U.S. troops in Afghanistan and other theaters in South Asia and the Mid-East. Officials at the Army's Night Vision and Electronic Sensors Directorate have stated that reading and assimilating this report is a requirement for anyone wishing to work in the field.



[Continued on Story 2](#)

Please visit our Web site at <http://iac.dtic.mil/iria> or send us an E-mail to iria@erim-int.com

[Visit the Archives section for past stories...](#)

Infrared IAC (IRIA)

IRIA

Story 1

Story 2

**Expanding the Scope of Military Sensing: Electric and Magnetic Field Sensing (continued)**

IRIA has traditionally served only the infrared and electro-optical sensing communities. With the advent of JV2010/20 and the associated Defense Science and Technology Strategies, it became clear that this focus did not serve all needed elements of the Military sensing science and technology community. IRIA initiated efforts to expand coverage into these other areas, including:

- Sensor and data fusion
- Acoustic and seismic sensing
- Camouflage, concealment, and deception
- Missile defense sensing
- Radar and radar technology

In CY2000, IRIA assisted Military Sensing Symposia (MSS) Specialty Group on Acoustic and Seismic Sensing in expanding their scope to include electric and magnetic field sensing. Working groups were held in parallel with the normally scheduled Acoustic and Seismic Sensing MSS meeting to determine the level of support required by the community. The response was excellent, and as a result, these technologies were incorporated in planning for the 2001 meeting.

This symposium was held in October 2001, and included several sessions dedicated to magnetic and electric field sensing. Attendees were highly pleased with this new thrust, and indicated that this approach will significantly aid them in their research and development efforts.

Please visit our Web site at <http://iac.dtic.mil/iria> or send us an E-mail to iria@erim-int.com

[Visit the Archives section for past stories...](#)



Infrared IAC (IRIA)

IRIA

Story 1

Story 2

Timely "Mine Detection SOAR" Supports War Effort (continued)

This SOAR provides an overview of the mine and unexploded ordnance problem. It covers the physical observable phenomena which can be used to sense mines and mine fields. The report treats detection via infrared, visible, active thermal, spectral, polarimetric, LIDAR, laser vibrometry, acoustics, electromagnetic induction, magnetics, ground penetrating radar, passive microwave radiometry, and nuclear quadrupole resonance. Sensor fusion algorithms and other signal processing approaches are covered as well. Currently, fielded mine detection sensor systems are also covered. The report also describes how individual mine detections may be combined into groups of detections and used to map mine fields. This report is required reading for researchers and evaluators in the mine detection operations.

Please visit our Web site at <http://iac.dtic.mil/iria> or send us an E-mail to iria@erim-int.com

[Visit the Archives section for past stories...](#)