



**U.S. Army Corps of Engineers
 Engineer Research and Development Center
 Environmental Laboratory**

Seismic-Acoustic Impact Monitoring and Assessment (SAIMA) System

Technology Description

The Seismic-Acoustic Impact Monitoring and Assessment (SAIMA) System provides real-time assessment and documentation of ordnance impacts (exploded high- or low-order and UXO) and geographical location of impacts (within 1-2m). The system is configured for 60- and 81-mm mortar ranges that encompass nominally 50 – 250 acres and for 105-, 120-, and 155-mm artillery ranges that encompass nominally 500 - 5000 acres. The system seismic acoustic sensor array deployment scheme is based on range-specific criteria, has sensor nodes positioned outside and surrounding the impact zone, and includes the seismic velocity structure, needed to assess ordnance impacts. The system provides the status of impacts within one minute and graphically displays the UXO location and coordinates on a map of the impact zone.

Benefits

SAIMA System technology minimizes range downtime for maintenance, improves safety and sustainability of active ranges, and minimizes future liability and remediation costs.

Significant Accomplishments

The SAIMA System successfully deployed in automated real-time operation 155mm, 105mm, 81mm, and 60mm training rounds (HE and UXO) using seismic acoustic sensor nodes located 200-500M outside the impact zone.

Completed Developments in Enhancing Capabilities

Development completed under Army SBIR program for the wireless version of the SAIMA system. Implementing scoring capabilities and integration with Range Management Tool Kit module.

Points of Contact

Mr. Hollis H. (Jay) Bennett, Jr. (CEERD-EE-C)
 601-634-3924; fax: 601-634-3726
Jay.Bennett@usace.army.mil

Mr. John H. Ballard (CEERD-EM-J)
 601-634-2446; fax 601-634-2854
John.H.Ballard@usace.army.mil

