

Technology Committee Report

National Association of Ordnance Contractors

October 5th, 2017



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Technology Committee

Discussion Topics

- ❑ DAGCAP Accreditation
- ❑ MetalMapper 2x2 Update
- ❑ SAGEEP 2018
- ❑ UXOCOE Technology Info Request
- ❑ Supporting Committees/BOD
- ❑ Miscellaneous Topics

DAGCAP Accreditation

<http://www.denix.osd.mil/mmrp/advanced-geophysical-classification-accreditation-and-other-tools/>

Organizations Accredited to Perform Advanced Geophysical Classification

AcornSI and NAEVA Joint Venture, LLC (AN JV)
2928 South Buchanan Street, Suite C-1
Arlington, VA 22206
Accrediting Body: ANAB
Terms of validation: 03/29/2017 through 03/29/2019

ARCADIS U.S., INC.
2101 L. St. NW, Suite 200
Washington, D.C. 20037
Accrediting Body: A2LA
Terms of validation: 08/15/2017 through 10/31/2019

Black Tusk Geophysics
1755 West Broadway, Suite 401
Vancouver, BC Canada
Accrediting Body: A2LA
Terms of validation: 7/13/2017 through 7/31/2019.

CH2M Hill, Inc.
2411 Dulles corner Park, Suite 500
Herndon, VA 20171
Accrediting Body: ANAB
Terms of validation: 05/03/2017 through 05/03/2019

Parsons Corporation
1776 Lincoln Street, Suite 600
Denver, CO 80203
Accrediting Body: A2LA
Terms of validation: 03/13/2017 through 05/31/2019

Tetra Tech EC, Inc.
350 Indiana Street
Golden, CO 80401
Accrediting Body: A2LA
Terms of validation: 08/9/2017 through 09/30/2019

APTIM (Formerly CBI)
accredited in September

Weston passed APG
DOC Week of Sept 18th

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MM 2x2 Validation Testing

- ❑ The objective of this effort was to validate the performance of the Geometrics MetalMapper 2x2 (MM2x2) under blind test conditions.
- ❑ Data collected by Dan Steinhurst and Glen Harbaugh (Nova) on September 27th and 28th using EXI's MM 2 x 2 system.
- ❑ The performance of the unit under dynamic data collection conditions was evaluated by dynamic data collection over approximately a half-acre of terrain seeded to represent a real UXO site.
- ❑ The performance of the unit under static data collection conditions was evaluated by collecting static data over 99 previously-located anomalies within a site seeded to represent a real UXO site.



MM 2x2 Validation Testing

- ❑ In both cases, the data were processed by Tom Furya (Acorn) using the Oasis montaj / UX-Analyze tool suite and procedures. Detection and classification lists were generated and submitted for scoring.
- ❑ The version of UX-Analyze used had some bug fixes that aren't in the current release. These fixes will be in the next release which is scheduled for November. The main fixes concerning the MM2x2 were;
 - ❖ 1) the application of a scale factor to the measured data,
 - ❖ 2) bug fixes to the static sensor function test and resample library tool, and
 - ❖ 3) adjusting QC and processing parameters.
- ❑ Detection and classification lists were generated and submitted for scoring.
- ❑ Observations from the field team were reported in a trip report.

MM 2x2 Validation Testing

MM 2x2 Results:

1. Based on scoring results from two independent sources, the data collected with a MM 2x2 was of sufficient quality to detect all expected TOI on a site seeded to be representative of a real UXO site.
2. Based on scoring results from two independent sources, the data collected with a MM 2x2 was of sufficient quality to classify 99 previously detected anomalies on a site seeded to be representative of a real UXO site.
3. In dynamic mode, the unit can operate under ambient conditions for 1 – 3 hours before a significant rest break is required.
4. In static mode, the unit can operate without issue after a 10-25 minute warmup period. Data collected during the warmup period do not compare well with post-warmup data, are noisier, and produce noisier polarization curves. Not sure if this is an issue with the EXI system or all systems.
5. Several recommendations were made regarding potential improvements for the physical structure of the cart.
6. No field inversions available.

SAGEEP 2018

- ❑ SAGEEP next year (March/April) in Nashville, TN
- ❑ EEGS would like MMRP geophysics to be one of the focus areas of the conference.
- ❑ **Oct 20th - Deadline for SAGEEP 2018 Short Abstract Submissions**
- ❑ Bill Doll, TetraTech will be the general chair for the conference and leading the effort with support of Technology Committee
- ❑ Planning committee – Bill Doll, John Jackson, Jon Miller, Greg Schultz, Jeff Leberfinger, Laurens Beran.
- ❑ Please provide any suggestions for achieving the EEGS goal to Bill Doll at William.Doll@tetrattech.com
- ❑ The call for papers is now open
 - ❖ <http://www.eegs.org/sageep-2018-sessions-abstracts>
- ❑ Volunteers or recommendations for co-chairs for any of the topics are welcome
- ❑ A special section of the outdoor demos devoted to MEC systems is anticipated


SAGEEP 2018

Session Suggestions

- ❑ Perspectives on MMRP Geophysics
- ❑ Recent Results in Marine Acoustic Methods for Detection and Classification
- ❑ Non-acoustic (EM and other) Methods for Marine MEC Detection and Classification
- ❑ Land and Underwater Positioning; state of the art and recent advances
- ❑ Lessons Learned from ESTCP Live Site Demonstrations
- ❑ Site Application of Classification Technologies – contractor experiences both good and bad
- ❑ Innovative Applications of Geophysics on MMRP Projects

UXOCOE Request

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(U//FOUO) Geosoft UX-Analyze Software 

BU//FOUO Budget Activity Level 4
BU//FOUO Technology Readiness Level: 7
BU//FOUO Threat Lane: Detection

BU//FOUO Purpose: UXO Target Classification, Modeling and Analysis.
 UX-Analyze provides proven capabilities to classify buried metal as unexploded ordnance (UXO) or not, based on multi-coil, classification-grade, electromagnetic induction (EMI) sensor data. Documents decisions in standardized presentations. A comprehensive toolset within the Oasis montaj software environment.

The streamlined processing flows and quality control measures allow users to focus on tasks that require critical thinking, while efficiently managing data handling and visualization. Users select target signatures of interest, process and model the data, compare results to known UXO, and make quantitative decisions whether the targets need to be excavated.

BU//FOUO Points of Contact: ESTCP Munitions Response PM Herb Nelson at (371) 372-6400, herb.nelson@oerda.mil; Geosoft P.M. Nick Valleau at (416) 369-0111, nick.valleau@geosoft.com; UX-Analyze Principal Investigator: Dean Eisenbiller at (303) 434-4774, deaneisen@oerda.mil; UXOCOE: Melissa Mottishaw at (703) 708-1962, melissa.mottishaw@us.af.mil

BU//FOUO Product: UXO Target Classification, Modeling and Analysis.
 The UX-Analyze system contains a streamlined menu for working with electromagnetic data including the following:

- Importing the target data, data corrections
- Defining and refining anomaly footprints
- Batch fitting a lot of targets
- Inspecting and refining existing targets
- Adding new targets
- Classifying targets
- Managing target sets
- Producing maps and a progress report

While helping to streamline complex tasks, the tools within UX-Analyze do require knowledge of geophysics for effective use and interpretation of results.

BU//FOUO Warfighter Payoff: Save millions of dollars through physics-based decision capability to not dig scrap metal at munitions clearance sites.

For more information:
<http://www.geosoft.com/products/government-sponsored-software>

BU//FOUO Schedule and Cost

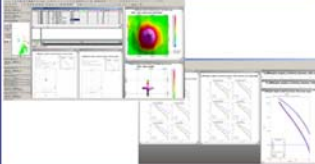
Activity by Fiscal Year (approx)	FY06	FY07	FY08	FY10	FY11	FY12	FY13	FY14	FY15
Implement modelling for magnetic & EMI sensors									
Implement classification with advanced sensors (used mode)									
Implement classification with advanced sensors (dynamic mode)									
Simplification and robustness									
Delivery to US Gov't, Contractors & Regulators									
Ongoing software maintenance									
Annual free public training									
Ongoing technical support for users									

Total ESTCP /DoD Funding to date approx \$1.8M (\$1.800M)

Current as of 31 October 2014

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- ❑ UXOCOE requested innovative and new MMRP technologies for their FY 17 annual report from NAOC companies
- ❑ Provided similar info in FY 14 and FY16 report.
- ❑ Info has to be in a quad chart format – which I provided (power point format)
- ❑ We need to submit info on Oct 16th – so the sooner you can get the info to me the better.

Supporting BOD/Committees

**NAOC General Membership Meeting – San Diego, CA
December 5th – 7th**

- Support agenda planning committee
 - ❖ Underwater Case History – Black Tusk – “Case-Study Using a High-Resolution Electromagnetic Induction System for Detection and Characterization of Unexploded Ordnances, Sea-Mines and Dredging Hazards”

- Abstracts for Posters due October 16th (extended from Oct 1)
 - ❖ Will also need volunteers to review and help select abstracts – need 3 or 4 volunteers.

Miscellaneous Topics

- ❑ No Fall ESTCP/SERDP IPR Meetings this year.
- ❑ SERDP/ESTCP Symposium (Nov 28th - 30th)
- ❑ Expect Draft MEC QAPP before NAOC General Membership Meeting from EDQW
 - ❖ May need reviewers for QAPP SOPs in support of OSC
 - ❖ Jordan Adelson to do MEC-QAPP workshop at NAOC Membership Meeting

Technology Committee Contact

QUESTIONS ?

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Chair, Technology Committee

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