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The Information Management & Mine Action Programs

The Information Management & Mine Action Programs use information management and technology to increase humanitarian mine-action safety and efficiency. The work conducted in Iraq, which supports mine-clearance and victim-assistance activities, is an example of iMMAP facilitating improved information sharing in HMA. In addition, these improved information-management activities allow iMMAP to provide ongoing victim-assistance services to persons with disabilities in Iraq and to other patient populations.

by Eric Sawyer [iMMAP]

Since the late 1990s, attacks on humanitarian relief-and-development workers have steadily grown. Factors contributing to this rising threat include increasingly unstable environments, an expansion in the number of deployed relief-and-development workers, and the erosion of humanitarian neutrality and independence. This increase has been difficult to quantify due to the lack of coherent data concerning security incidents, as well as other contextual information such as disaster events and explosive remnants of war-related data.

The safety-and-security information gap hampers relief-and-development efforts by the United Nations and other national and international nongovernmental organizations. Without this information, personnel lack a sound basis upon which to make safe operational and policy decisions. The Information Management & Mine Action Programs strive to decrease the dangers of these operations by compiling critical data in an efficient manner to facilitate better decision-making by project managers, logistics officers, security managers, field workers and other nontechnical personnel who make daily decisions affecting the safety of personnel and agency field operations.

Tools

In 2006, iMMAP developed a solution to fill the security-information gap—the Operations Activity Security Information System. This technology was introduced in Iraq and is used by numerous U.N., nongovernmental and response organizations in Afghanistan, Colombia, Georgia and Pakistan. Building on a common operating picture by compiling dispa-



Figure 1. Layout of OASIS software.
All figures courtesy of the author.

rate event and operations data in one place, OASIS allows users to achieve a comprehensive situational awareness.¹ Along with OASIS, iMMAP employs the Information Management System for Mine Action to manage the vast amount of humanitarian mine-action geospatial information collected in the field. The two systems work together to assist the Iraqi government and humanitarian organizations by creating the humanitarian mine-action common operating picture, allowing for humanitarian and response organizations to combine efforts in planning for overall security and general operations with a clearer understanding of contamination and security hazards. This provides a safer and more effective way to confront the challenges facing Iraq as a heavily contaminated country.

OASIS allows authorized users to enter and share data related to humanitarian mine action through custom interfaces.



Figure 2. Map depicting the type of security incidents stored in OASIS that have occurred over the past four years inside the Green Zone in Baghdad, Iraq.

Once the client posts or edits shareable information, the data is automatically synchronized via a central server, providing access to all OASIS users working in other regions that possess information-sharing capabilities. This increase in information-sharing is critical when assessing risks and dangers of humanitarian mine-action operations.

With user-friendly information tools for data-entry, analysis, mapping, reporting and data-sharing, OASIS breaks complex tasks into easy-to-understand steps using software that minimizes errors, reduces training requirements and encourages users to interact with the system.

OASIS provides organizations in the field with:

- Shared security-incident data
- Standardized reporting formats
- Evacuation-planning tools
- Personnel-accountability tools
- Location monitoring
- Easy-to-use analysis tools
- Mapping capabilities

Developed by the Center for Security Studies and Conflict Research at the Swiss Federal Institute of Technology in Zurich, Switzerland, on behalf of the Geneva International Centre for Humanitarian Demining and funded primarily by the Swiss government with assistance from other donors, IMSMA improves the safety, speed and efficiency of humanitarian mine-action activities. IMSMA also improves the operating environment for aid workers and deminers, as well as the beneficiaries they serve. The technology can be used to plan, manage, report and map the results of survey and field-data collections, as well as report and map clearance activities. IMSMA assists managers in tracking the progress of their work, in addition to analyzing and supporting prioritization decisions. National personnel who are trained and mentored by iMMAP maintain and operate IMSMA.

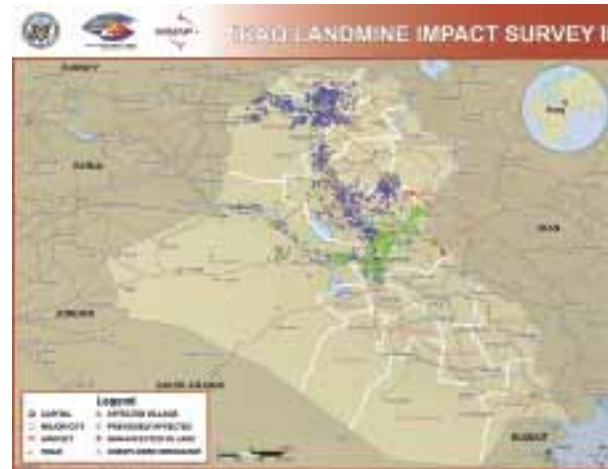


Figure 3. Map showing the results of an Iraq Landmine Survey II.

An overarching HMA common operating picture is only achieved through OASIS and IMSMA's integration. Along with a wider range of relief, development and reconstruction stakeholders operating in Iraq, the two tools facilitate **mainstreaming** of HMA data to support ongoing reconstruction activities. HMA data and management information will continue ensuring that national stakeholders can utilize the system for operational and strategic planning for the foreseeable future. Additionally, by integrating HMA information with the humanitarian common operating picture enabled by the OASIS system, a range of stakeholders engaged in relief, reconstruction and development activities in Iraq can more easily access HMA-contamination and operations information.

OASIS in Action

By streamlining advanced geo-processing tasks for operators and project managers, OASIS improves HMA's effectiveness and efficiency, which is conducted by putting the proprietary IMSMA software's data, along with other relevant mission-specific spatial data, in the hands of HMA actors at all levels. This enables users to assess the situation and plan for a safe and effective field operation without extensive software costs or needing staffed information offices.

Specifically, OASIS assists in properly identifying site locations. In order for sites to be divided into sections and overlaid with other datasets like imagery or elevations, clients use the system to bring together IMSMA datasets with other relevant datasets that are not always readily available in a standard format. This provides for enhanced support of on-site planning and implementation of the appropriate removal technique. Moreover, this allows users to view operational information in an open-source, geographic information-system environment.

The OASIS system provides HMA organizations with a means to find new contaminated sites for clearance. The orga-

nization can retrieve the updated IMSMA data from national mine-action authorities and load that data into OASIS. Users can then see open contaminated sites (suspected hazardous areas that have not been cleared or are in the clearance process) and address the feasibility of the site or any corresponding security concerns. Furthermore, OASIS assists in ensuring travel security by allowing users to view security incidents along the route, which can help travelers find the safest route and the safest time of day, or day of the week, to travel to a given location. With the most recorded security incidents in Iraq, the OASIS security database contains more than 100,000 incidents since it began keeping records in 2006. As a result, OASIS allows for an assortment of trend analyses to improve operational safety.

Iraq

Landmines and unexploded ordnance severely affect Iraq. The Directorate for Mine Action in Iraq estimates that landmines cover an area of 1,101 square kilometers (425 square miles), and UXO-contaminated areas cover an estimated 479 square kilometers (185 square miles). In addition, hundreds of cached and abandoned ordnance sites are believed to exist throughout the country, sites that not only pose an immediate humanitarian risk, but serve as a ready source of explosives for insurgents. Due to the intense security risks inherent to working in Iraq, developing a common operating picture of contamination and mitigation efforts is challenging. Every day, Iraq has more than 25 security incidents, ranging from improvised-explosive-device attacks to civil unrest; consequently, danger is a part of daily life for those traveling to and from its worksites. Humanitarian and reconstruction stakeholders were previously unable to reliably coordinate with Iraq's national and regional mine-action coordination centers. To address this need, iMMAP and Iraq's Directorate of Mine Action reconstituted Iraq's IMSMA capacity in 2007.

iMMAP now produces Iraq's overarching HMA plan by integrating IMSMA, OASIS and Landmine Impact Survey information. Furthermore, with the development of geospatial data, security incidents, gazetteers,² transportation networks and other datasets, iMMAP can overlay results and provide a more detailed understanding of landmine/UXO contamination.

By making HMA information simpler and more accessible to the relief-and-development community, iMMAP creates awareness for activities such as demining, explosive-ordnance disposal and mine-risk education. iMMAP also enables ERW reporting that would not typically be provided to relief-and-development implementers. iMMAP gathers and



A landmine survivor is fitted with a new prosthetic during a training session.
Photo courtesy of Dave Evans.

combines various reports using OASIS and other geospatial tools, ensuring that humanitarian and reconstruction activities are conducted safely in potentially contaminated areas.

All recent IMSMA data is made accessible through OASIS, providing users with timely and accurate information concerning ERW contamination as it becomes available. With the Office of Weapons Removal and Abatement in the U.S. Department of State's Bureau of Political-Military Affairs (PM/WRA) providing resources, iMMAP's HMA activities in Iraq obtain new and previously unreported landmine/UXO contamination data through the Landmine Impact Survey and other field-data collection efforts. These data are entered into the IMSMA records and integrated into the national operational and strategic-planning processes utilized by the Directorate for Mine Action, the Iraqi Kurdistan Mine Action Agency, and other Iraqi governmental entities and international re-



Figure 4. Map showing the ongoing efforts of PM/WRA to fund mine-action projects in Iraq.

sponders. Additionally, OASIS enables data-sharing with other reconstruction and relief organizations, allowing these groups to safely implement a wide range of field projects in Iraq.

Conclusion

Using OASIS and IMSMA, iMMAP works to make HMA in conflict and post-conflict arenas safer and more efficient. The security-information gap hampers efforts by the U.N. and other national, international and nongovernmental stakeholders. With accurate information about security incidents and ERW locations, people with little field experience can make informed decisions, increasing the safety of all operations. iMMAP provides a solution for minimizing the security-information gap—not only does OASIS provide the HMA community with quality information, but it also offers greater security for the individuals implementing humanitarian programs through increased information availability. Additionally, Iraq's ERW victims receive improved service and assistance to

speed their return to productive lives as a result of iMMAP's HMA information-management analysis. ◊

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CISR staff member Blake Williamson contributed to this article.



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