



**International Test and Evaluation Program  
for Humanitarian Demining**

**ITEP Work Plan 2008**

Portfolio of the ITEP Participants' test and evaluation activities for 2008<sup>1</sup>

**21<sup>st</sup> of February 2008<sup>2</sup>**

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<sup>1</sup> This document is complemented by the ITEP Work Plan 2000 – 2007, which summarises all test and evaluation activities carried out by the ITEP Participants since the creation of ITEP, and that were completed by the end of 2007.

<sup>2</sup> The draft ITEP Work Plan 2008 was compiled using the T&E project updates delivered by the ITEP Participants during the ITEP Work Plan annual revision meeting (The Hague, 19 – 20.02. 2008). It was endorsed by the ITEP Executive Committee on the 21st of February 2008.



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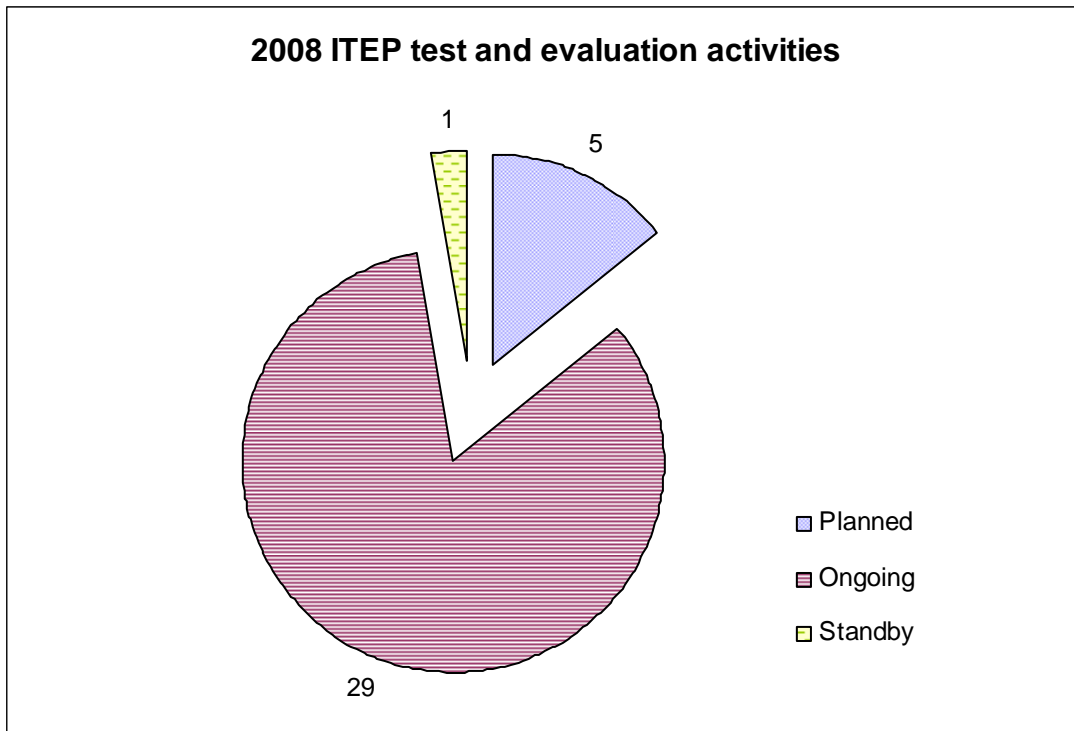
## 1 INTRODUCTION

ITEEP was created as a response for the desire to strengthen worldwide demining efforts and it seeks to achieve this through active co-operation among the Participants and also with other agencies and organisations. These efforts are realised through the ITEEP Work Plan. Its aim is to increase efficiency by avoiding duplications and feeding lessons learned back into the process. The output is to publish test results and to release them worldwide.

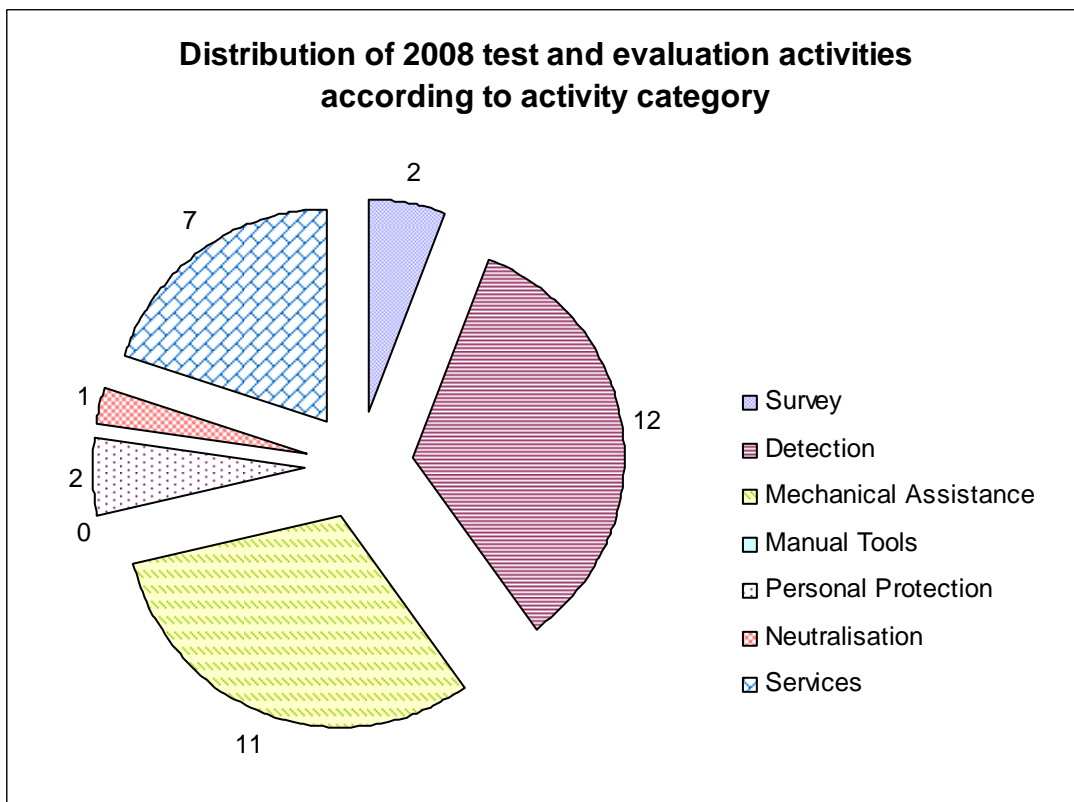
The ITEEP Work Plan 2008 reflects the ongoing and planned national or collaborative projects among the ITEEP Participants. It is complemented by the ITEEP Work Plan 2000 – 2007, which summarises (including conclusions) all test and evaluation activities by the ITEEP Participants since the creation of ITEEP, and that were completed by the end of 2007.

For clarity and management purposes, the Work Plan is divided into six technical programs: survey, detection, mechanical assistance, personal protection, manual tools and neutralisation. A separate program has been added to cover services provided by the ITEEP Secretariat or some ITEEP project management groups. The Services program includes, amongst others, capacity building activities, involving mainly training and advice on test methodology to entities in mine affected countries.

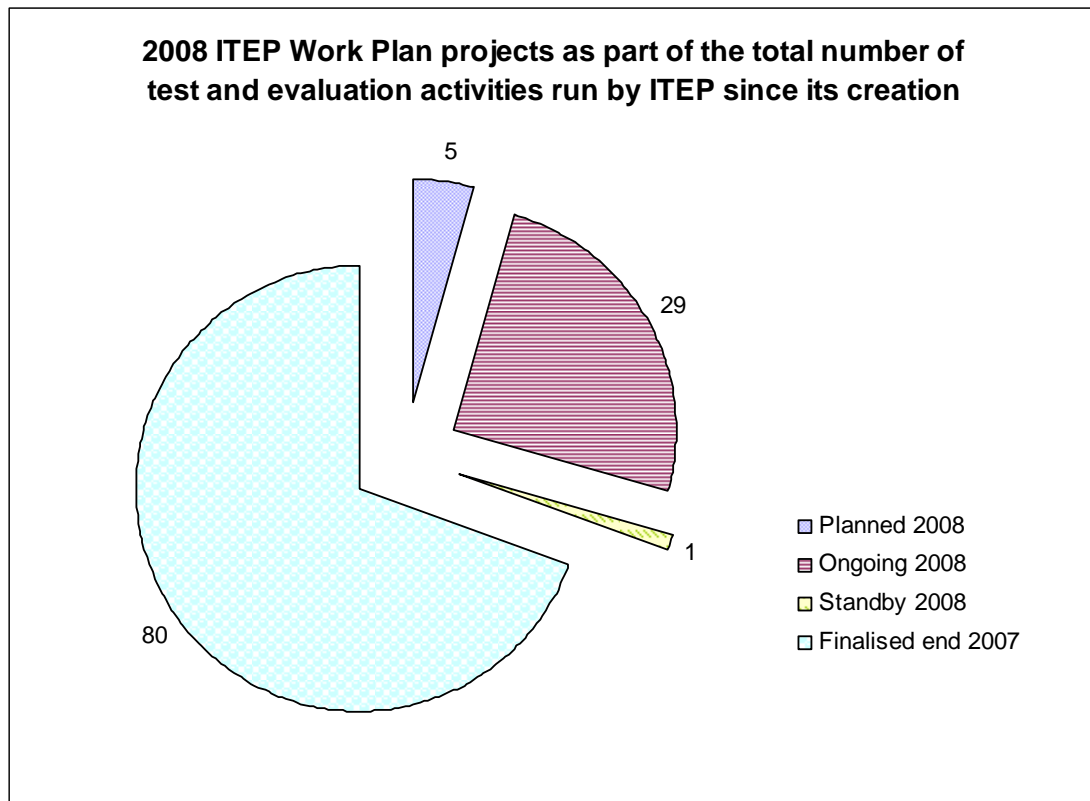
The following graphs provide an idea of the number of ongoing and planned projects for this year (*Graph 1*) and their proportional grouping into the different technical programs (*Graph 2*). *Graph 3* shows the 2008 ITEEP Work Plan projects as part of the total number of test and evaluation activities run by ITEEP since its creation.



Graph 1



Graph 2



*Graph 3*

ITEP also maintains a close working relationship with the UNMAS and GICHD, and ITEP Participants are also encouraged to outreach into the user community to seek feedback on the Work Plan and identify user needs.

The ITEP Work Plan documents are available at the ITEP website (<http://www.itep.ws/>) and distribution is also assisted by the UNMAS and GICHD. All ITEP project descriptions can also be consulted via a searchable web database ([http://www.itep.ws/activities/itep\\_workplan/search\\_workplan.php](http://www.itep.ws/activities/itep_workplan/search_workplan.php)), which is frequently updated with new project information provided by the ITEP Participants. It is therefore recommended to consult the ITEP Work Plan database whenever the latest information on ITEP test and evaluation activities is required.

## 2 OVERVIEW OF 2008 TEST AND EVALUATION PROJECTS

### 2.1 Summary statistics

<i>Category</i>	<i>Planned</i>	<i>Ongoing</i>	<i>Standby</i>	<i>Total</i>	
				<i>Number</i>	<i>Percentage</i>
<b>Survey</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>6</b>
<b>Detection</b>	<b>3</b>	<b>9</b>	<b>0</b>	<b>12</b>	<b>34</b>
Metal detector	1	2	0	3	
Ground Penetrating Radar	1	1	0	2	
Trace explosives	0	0	0	0	
Multi-sensor	1	5	0	6	
Others	0	1	0	1	
<b>Mechanical Assistance</b>	<b>1</b>	<b>10</b>	<b>0</b>	<b>11</b>	<b>31</b>
<b>Manual Tools</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Personal Protection</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>6</b>
<b>Neutralisation</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>3</b>
<b>Services</b>	<b>0</b>	<b>6</b>	<b>1</b>	<b>7</b>	<b>20</b>
<b>Total</b>	<b>5</b>	<b>29</b>	<b>1</b>	<b>35</b>	<b>100</b>

## 2.2 Projects time scale

### 2.2.1 SURVEY

Project Nr	Title	Lead	Partners	2007		2008		2009	
	<b>Methodology</b>								
	<b>Test and Evaluation</b>								
1.2.4	Development of the APOPO-PARADIS GIS <i>Ongoing</i>	BE	APOPO	*****	*****	**			
1.2.5	Test and Evaluation of the generic SMART methodology <i>Ongoing</i>	BE	CROMAC - CTRO (Croatia), Faculty of Geodesy - University of Zagreb (Croatia)			*****	*****	****	

### 2.2.2 DETECTION

#### *Metal detector*

Project Nr	Title	Lead	Partners	2007		2008		2009	
	<b>Methodology</b>								
2.1.1.5	Metal Detector Performance Project (MDPP). <i>Ongoing</i>	BE	CA	*****	*****	*****	*****		
	<b>Test and Evaluation</b>								
2.1.2.6	In-soil and in-country performance evaluation of vehicle-mounted metal detection systems. <i>Planned</i>	NL	TBD						
2.1.2.7	Vehicular Array for Deep Buried Mines and UXO (GEMINI) <i>Ongoing</i>	US		*****	*****	*****	*****		

**Ground Penetrating Radar**

Project Nr	Title	Lead	Partners	2007		2008		2009	
	<b>Methodology</b>								
	<b>Test and Evaluation</b>								
2.2.2.3	NIITEK Ground Penetrating Radar system (Minestalker). <i>Ongoing</i>	US		*****	*****	*****	*****		
2.2.2.7	Test and evaluation of stand-alone ground penetrating radar systems <i>Planned</i>	DE	TBD			****	*****	*****	*****

**Trace Explosives**

**Multi-sensor**

Project Nr	Title	Lead	Partners	2007		2008		2009	
	<b>Methodology</b>								
2.4.1.2	CEN Workshop on soil characterisation for metal detector and ground penetrating radar performance evaluation. <i>Ongoing</i>	BE ( <a href="#">RMS</a> )	Various	*****	*****	*****	***		
2.4.1.3	Develop and validate test procedures for dual-sensor mine detectors consisting of a metal detector and a ground penetrating radar <i>Ongoing</i>	DE	BE, CA, NL, SE, US, Japan Science and Technology Agency ( <a href="#">JST</a> ) - Tohoku University	*****	*****	*****	*****		
	<b>Test and Evaluation</b>								
2.4.2.1	Development of the HD version of the Handheld STAnd-off Mine Detection System (HSTAMIDS). <i>Ongoing</i>	US		*****	*****	*****	*****		
2.4.2.9	Discriminating Mine Detector (DMD) <i>Ongoing</i>	US		*****	*****	*****	*****		
2.4.2.13	Evaluate the performance of dual-sensor detector in	DE	TBD			****	*****	*****	*****

Project Nr	Title	Lead	Partners	2007		2008		2009	
	humanitarian demining as compared to stand-alone metal detectors <i>Planned</i>								
2.4.2.11	Handheld STAnd-off Mine Detection System (HSTAMIDS) Long Term Operational Evaluations. <i>Ongoing</i>	US	<a href="#">Halo Trust</a> , Mines Advisory Group ( <a href="#">MAG</a> ), Cambodian Mine Action Centre ( <a href="#">CMAC</a> ), Thailand Mine Action Centre ( <a href="#">TMAC</a> )	*****	*****	*****	*****		

### Others

Project Nr	Title	Lead	Partners	2007		2008		2009	
	<b>Methodology</b>								
	<b>Test and Evaluation</b>								
2.5.2.5	Handheld sweep magnet <i>Ongoing</i>	US		*****	*****	***			

### 2.2.3 MECHANICAL ASSISTANCE

Project Nr	Title	Lead	Partners	2007		2008		2009	
	<b>Methodology</b>								
	<b>Test and Evaluation</b>								
3.1.4	Methodology for the test and evaluation of mobile robotics for the detection of AP mines. <i>Ongoing</i>	BE	International Advanced Robotics Program (IARP)	*****	*****	*****	*****		
3.2.6	Tempest <i>Ongoing</i>	US	Accelerated Demining Program Mozambique (ADP), Thailand Mine Action Centre	*****	*****	*****	*****		



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Project Nr	Title	Lead	Partners	2007		2008		2009	
			( <a href="#">TMAC</a> ), Cambodian Mine Action Centre ( <a href="#">CMAC</a> ), Mines Advisory Group ( <a href="#">MAG</a> ), <a href="#">HALO Trust</a> , National Demining Center of Ecuador						
3.2.9	Test, evaluate and upgrade the Mini-Mulcher (MAXX). <i>Ongoing</i>	US	National Mine Action Coordination Centre of Guinea Bissau, People Against Landmines ( <a href="#">MgM</a> )	*****	*****	*****	*****		
3.2.31	Mini-Mulcher (MAXX+) <i>Ongoing</i>	US	Mines Advisory Group ( <a href="#">MAG</a> ), People Against Landmines ( <a href="#">MgM</a> )	*****	*****	*****	*****		
3.2.13	HALO Trust mechanical equipment development. <i>Ongoing</i>	US	<a href="#">HALO Trust</a>	*****	*****	*****	*****		
3.2.20	Multi-Tooled Excavator <i>Ongoing</i>	US	Cambodian Mine Action Centre ( <a href="#">CMAC</a> ) , <a href="#">Chilean National Demining Commission</a> , <a href="#">HALO Trust</a>	*****	*****	*****			
3.2.38	Robotic Mine Detector (100 Bot). <i>Ongoing</i>	US		*****	*****	*****	*****		
3.2.39	Rapid Area Preparation Tool (RAPTOR) <i>Ongoing</i>	US	<a href="#">HALO Trust</a>	*****	*****	*****	*****		
3.2.40	Severe Terrain Off Route Menzi-Muck (STORM) <i>Ongoing</i>	US		*****	*****	*****	*****		
3.2.45	MV 10 Test and Evaluation <i>Planned</i>	SE	TBD			*			
3.2.46	Flail fundamentals <i>Ongoing</i>	CA		*****	*****	*****	*****	*****	*****



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**2.2.4 MANUAL TOOLS**

**2.2.5 PERSONAL PROTECTION**

Project Nr	Title	Lead	Partners	2007		2008		2009	
	<b>Methodology</b>								
	<b>Test and Evaluation</b>								
5.2.5	Test and Evaluation of Personal Protective Equipment <i>Planned</i>	SE	TBD						
5.2.4	Visor Heat Treatment <i>Ongoing</i>	CA				***			

**2.2.6 NEUTRALIZATION**

Project Nr	Title	Lead	Partners	2007		2008		2009	
	<b>Methodology</b>								
	<b>Test and Evaluation</b>								
6.2.11	Explosive Harvesting System (EHS) <i>Ongoing</i>	US	<a href="#">Golden West Humanitarian Foundation</a> , Cambodian Mine Action Centre ( <a href="#">CMAC</a> ), Mines Advisory Group ( <a href="#">MAG</a> ), <a href="#">Halo Trust</a>	*****	*****	*****	*****		



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**2.2.7 SERVICES**

Project Nr	Title	Lead	Partners	2007	2008	2009
<b>Input</b>						
7.1.2	Collect test reports and information on national programs. <i>Ongoing</i>	IS	All ITEP Participants and other entities producing HD demining equipment test reports	*****	*****	*****
7.1.3	Establish contacts with mine action partners world wide. <i>Ongoing</i>	IS	All ITEP Participants	*****	*****	*****
7.1.4	Lessons learned from test and evaluation. <i>Ongoing</i>	IS	All ITEP Participants	*****	*****	*****
<b>Output</b>						
7.2.1	Follow up on requests for advice on test and evaluation procedures. <i>Standby</i>	All ITEP Participants.				
7.2.2	Maintenance and upgrade of the ITEP website. <i>Ongoing</i>	IS	All ITEP Participants.	*****	*****	*****
7.2.3	Humanitarian Demining Research and Development technologies information materials and website. <i>Ongoing</i>	US		*****	*****	
7.2.5	Support to the Geneva International Centre for Humanitarian Demining (GICHD) detection and mechanical equipment catalogues. <i>Ongoing</i>	IS	All ITEP Participants	*****	*****	*****

(\* **Partners:** BE = Belgium, CA = Canada, DE = Germany, NL = The Netherlands, SE = Sweden, US = United States, IS = ITEP Secretariat

## 2.3 DESCRIPTION OF ONGOING AND PLANNED PROJECTS

### 2.3.1 SURVEY

Project Nr	Title	Lead
	<b>Methodology</b>	
	<b>Test and Evaluation</b>	
1.2.4	Development of the APOPO-PARADIS GIS <i>Ongoing</i>	BE
1.2.5	Test and Evaluation of the generic SMART methodology <i>Ongoing</i>	BE

<b>Project Nr 1.2.4</b>	
<b>Title</b>	Development of the APOPO-PARADIS GIS
<b>Description</b>	<a href="#">APOPO</a> has developed an original method of explosive detection using African rats. This NGO is currently working in Mozambique on the clearance of real minefields. <a href="#">PARADIS</a> (a Prototype for Assisting Rational Activities in Demining using Images from Satellites) is a GIS aimed at improving the planning of humanitarian demining campaigns. PARADIS was first developed for the Belgian Armed Forces Bomb Disposal Unit (SEDEE-DOVO), but several field tests conducted in Mozambique from October 2005 to July 2007 showed that it could be useful to record, monitor and fine-tune the APOPO clearance process. However, the field trials also showed that the system required to be further developed in order to fit the APOPO operational procedures. This task started in September 2007, and a first testing face of the APOPO tailored system is scheduled for late January 2008. Feedback will then be used by the development team to further fine-tune the system.
<b>Aim</b>	Field tests of the PARADIS system <i>tailored to the APOPO needs</i> .
<b>Request</b>	<a href="#">APOPO</a>
<b>Category</b>	Survey
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	Software: PARADIS Field and Planning interfaces ((based on respectively ESRI ArcPad and ArcView)), Hardware: PC, PDA, GPS
<b>Development</b>	Prototype/Demonstrator
<b>Time frame</b>	2006-10-01 to 2008-02-29
<b>Place</b>	Mozambique
<b>Lead nation</b>	Belgium
<b>Partners</b>	APOPO
<b>Point of contact</b>	Sebastien Delhay, <a href="mailto:sdelhay@elec.rma.ac.be">sdelhay@elec.rma.ac.be</a>
<b>Web site</b>	<a href="http://www.sic.rma.ac.be/Projects/Paradis/index.html">http://www.sic.rma.ac.be/Projects/Paradis/index.html</a>
<b>Status</b>	Ongoing

<b>Comments</b>	<ul style="list-style-type: none"> <li>• Some preliminary development trials were carried out during the period 2005 - 2007. The <a href="#">test report</a> of the October 2006 development trial is available on the ITEP website.</li> <li>• The system will be installed at the APOPO premises in Mozambique at the end of January 2008, where it will be used by APOPO in a live minefield for recording and planning of their clearance operations.</li> <li>• The system is expected to be fully functional at the end of February 2008.</li> </ul>
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<b>Project Nr 1.2.5</b>	
<b>Title</b>	Test and Evaluation of the generic SMART methodology
<b>Description</b>	The SMART methodology is a wide area survey methodology that was developed during a European Commission (EC) Information Society Technology (IST) project and rigorously validated over a test area of 50 km <sup>2</sup> in Croatia. The system is based on fusion of sensor data (SAR, multispectral, color IR), expert knowledge, data from the mine information system and contextual information. In-house developed, as well as COTS image and data processing tools are used and human interpretation is also included in the processing-analysis-decision loop. The system, however, has not been fully developed and integrated. The current project foresees further development and integration for a test area where some data is already available and, if the funding is available for a second phase, the deployment of the system in a new area.
<b>Aim</b>	Validation of the system in preparation for its deployment in Croatia.
<b>Request</b>	Centre for Testing, Development and Training ( <a href="#">CROMAC-CTRO</a> , Croatia), Croatian Mine Action Centre ( <a href="#">CROMAC</a> )
<b>Category</b>	Survey
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	SMART (version 05 and additional software modules)
<b>Development</b>	Prototype/Demonstrator
<b>Time frame</b>	2008-01-01 to 2009-04-30
<b>Place</b>	CROMAC-CTRO (Croatia), Faculty of Geodesy - University of Zagreb (Croatia), Royal Military School (RMS, Belgium)
<b>Lead nation</b>	Belgium
<b>Partners</b>	CROMAC - CTRO (Croatia), Faculty of Geodesy - University of Zagreb (Croatia)
<b>Point of contact</b>	Yann Yvinec, <a href="mailto:yvinec@elec.rma.ac.be">yvinec@elec.rma.ac.be</a> or Milan Bajic, <a href="mailto:milan.bajic@zg.htnet.hr">milan.bajic@zg.htnet.hr</a>
<b>Web site</b>	<a href="http://www.smart.rma.ac.be/">http://www.smart.rma.ac.be/</a>
<b>Status</b>	Ongoing
<b>Comments</b>	<ul style="list-style-type: none"> <li>• The presentations of the workshop <a href="#">Inventory and analysis of operationally validated results related to mine action space - and airborne surveys</a> (Zagreb, Croatia, 30.11.2005), are available via the ITEP website.</li> <li>• The first phase of the project runs until April 2008, while the second phase, if funded, will run until April 2009.</li> </ul>

### 2.3.2 DETECTION

Project Nr	Title	Lead
<b>Metal detector</b>		
	<b>Methodology</b>	
2.1.1.5	Metal Detector Performance Project (MDPP). <i>Ongoing</i>	BE
	<b>Test and Evaluation</b>	
2.1.2.6	In-soil and in-country performance evaluation of vehicle-mounted metal detection systems. <i>Planned</i>	NL
2.1.2.7	Vehicular Array for Deep Buried Mines and UXO (GEMINI) <i>Ongoing</i>	US
<b>Ground Penetrating Radar</b>		
	<b>Methodology</b>	
	<b>Test and Evaluation</b>	
2.2.2.3	NIITEK Ground Penetrating Radar system (Minestalker). <i>Ongoing</i>	US
2.2.2.7	Test and evaluation of stand-alone ground penetrating radar systems <i>Planned</i>	DE
<b>Trace Explosives</b>		
<b>Multi-sensor</b>		
	<b>Methodology</b>	
2.4.1.2	CEN Workshop on soil characterisation for metal detector and ground penetrating radar performance evaluation. <i>Ongoing</i>	BE ( <a href="#">RMS</a> )
2.4.1.3	Develop and validate test procedures for dual-sensor mine detectors consisting of a metal detector and a ground penetrating radar <i>Ongoing</i>	DE
	<b>Test and Evaluation</b>	
2.4.2.1	Development of the HD version of the Handheld STAnd-off Mine Detection System (HSTAMIDS). <i>Ongoing</i>	US
2.4.2.9	Discriminating Mine Detector (DMD) <i>Ongoing</i>	US
2.4.2.13	Evaluate the performance of dual-sensor detector in humanitarian demining as compared to stand-alone metal detectors <i>Planned</i>	DE
2.4.2.11	Handheld STAnd-off Mine Detection System (HSTAMIDS) Long Term Operational Evaluations. <i>Ongoing</i>	US
<b>Others</b>		
	<b>Methodology</b>	
	<b>Test and Evaluation</b>	
2.5.2.5	Handheld sweep magnet <i>Ongoing</i>	US

## Metal detector

<b>Project Nr 2.1.1.5</b>	
<b>Title</b>	Metal Detector Performance Project (MDPP).
<b>Description</b>	<p>MDPP is a tentative program to establish an objective and systematic T&amp;E procedure of metal detectors that will allow to predict capabilities of detectors in a specific environment for a specific threat with a specific operational procedure (SOP) and against a specific Statements Of Requirements (SOR). The results could be useful to propose improvements to the <a href="#">CEN Workshop 7</a>. It puts emphasis on understanding by answering not only which detector performs better but also why. It aims to provide more precise answers in specific scenarios of interest for a given user. It also stresses the need for modeling and well-chosen measurements in order to reach maximum re-usability of the performed measurements. This is mandatory to obtain answers for the huge diversity of scenarios encountered and is the only solution to guarantee the high reliability called for in humanitarian demining with a realistic number of measurements.</p> <p>The major underlying hypothesis is that the different components, soil, target, metal detector and operator may be decoupled to a certain extent allowing for independent measurements on the targets, soils, detectors and operators of interest. The limits of the latter hypothesis will be studied and in some cases, limited coupling will have to be considered. The model will predict the detection depth for a given detector, for a given target, in a given soil, as a function of the horizontal relative position of the target and the detector. Then taking into account a model of the scanning path, it will predict a detection depth statistics for an operator. The model will further be validated for a limited number of detectors, targets and environmental conditions (soil types). The final report will include a description of the developed methodology for performance assessment, its evaluation and plans for further developments.</p>
<b>Aim</b>	Development and validation of a model to predict metal detector performance based on knowledge of the environment, the target characteristics and the demining procedure used. Definition of a limited number of well-chosen measurements needed as input.
<b>Request</b>	Belgium
<b>Category</b>	Detection – Metal detector
<b>Type</b>	Methodology
<b>Equipment</b>	N/A
<b>Development</b>	N/A
<b>Time frame</b>	2003-06-01 to 2008-12-31
<b>Place</b>	Belgium, Canada
<b>Lead nation</b>	Belgium
<b>Partners</b>	Canada
<b>Point of contact</b>	Pascal Druyts, <a href="mailto:pascal.druyts@rma.ac.be">pascal.druyts@rma.ac.be</a>
<b>Web site</b>	<a href="http://www.sic.rma.ac.be/~pdruyts/">http://www.sic.rma.ac.be/~pdruyts/</a>
<b>Status</b>	Ongoing
<b>Comments</b>	<ul style="list-style-type: none"> <li>During 2008 the work will focus on the development of a high accuracy coil model including response to electric charges as a tentative to explain the effect of</li> </ul>

	<p>water on the detector head.</p> <ul style="list-style-type: none"> <li>• This modeling effort is performed in the scope of a Ph.D. thesis funded by the Belgian Ministry of Defence (BEMAT project). The thesis is co-promoted by <a href="#">UCL</a> and <a href="#">RMA</a> and <a href="#">Defence Research and Development (DRDC)</a> acts as a scientific advisor.</li> <li>• The project could constitute the first phase of a systematic program aiming to evaluate mine detection systems through a limited set of experimental data and a good understanding of the detection physics. The prediction will be evaluated by comparing with measurements performed on real targets and in real soil during related measurements campaigns.</li> <li>• Intermediate results of the project can be found in a <a href="#">SPIE 2006</a> and <a href="#">EUCAP 2006</a> publication</li> </ul>
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<b>Project Nr 2.1.2.6</b>	
<b>Title</b>	In-soil and in-country performance evaluation of vehicle-mounted metal detection systems.
<b>Description</b>	This project is a follow-up of the ITEP Project <a href="#">2.1.2.5</a> . The detection performance of COTS vehicle-mounted metal detection systems will be assessed for mine-like objects buried in different soil types. This phase of the project will be done under controlled conditions where the systems under test are mounted on a special measurement bridge. In the in-country test phase, the systems will be tested under (simulated) operational conditions. The systems will be mounted on a vehicle, exposed to the local climate and tested on mine-like objects and indigenous clutter.
<b>Aim</b>	Assessment of the detection performance of COTS vehicle-mounted metal detection systems for a limited number of soil types and in a limited number of mine-affected countries.
<b>Request</b>	<a href="#">GICHD</a>
<b>Category</b>	Detection - Metal detector
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	Vehicle mounted metal detector arrays and large-loop systems (TBD)
<b>Development</b>	COTS
<b>Time frame</b>	0000-00-00 to 0000-00-00
<b>Place</b>	<a href="#">TNO</a> , The Hague, The Netherlands; mine-affected countries (TBD)
<b>Lead nation</b>	The Netherlands
<b>Partners</b>	TBD
<b>Point of contact</b>	Arnold Schoolderman, <a href="mailto:arnold.schoolderman@tno.nl">arnold.schoolderman@tno.nl</a>
<b>Web site</b>	
<b>Status</b>	Planned
<b>Comments</b>	<ul style="list-style-type: none"> <li>• The start and execution of this project depends on the progress, results and experiences of the in-air and limited in-soil performance evaluation of vehicle-mounted metal detection systems that is currently done by DRDC, CA (ITEP Project <a href="#">2.1.2.5</a>).</li> <li>• Proposal is submitted under reservation of national funding.</li> </ul>

<b>Project Nr 2.1.2.7</b>	
<b>Title</b>	Vehicular Array for Deep Buried Mines and UXO (GEMINI)
<b>Description</b>	The system is a vehicle mounted <a href="#">gradiometer sensor array</a> that can detect and characterize UXO and metal AT land mines in real time. The system is remote controlled and has an integrated mapping capability.. The project is a response to requests from Cambodia and Somaliland for a system with a better discrimination capability in difficult soil to be used for detecting UXO and for quality assurance.
<b>Aim</b>	Develop, test and evaluate an enhanced detector. Outcome - Prototype hardware and a test report.
<b>Request</b>	Users, Donors, NMAAs, NGOs.
<b>Category</b>	Detection - Metal detector
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	<a href="#">GEMINI</a>
<b>Development</b>	COTS
<b>Time frame</b>	2006-01-01 to 2008-12-31
<b>Place</b>	United States, US CECOM-RDEC, NVESD, Countermine Division, Ft. Belvoir, VA, Humanitarian Demining Test Facility Ft. AP Hill, VA, and other countries (TBD).
<b>Lead nation</b>	United States
<b>Partners</b>	
<b>Point of contact</b>	Lee Offen, <a href="mailto:lee.offen@nvl.army.mil">lee.offen@nvl.army.mil</a>
<b>Web site</b>	<a href="http://www.humanitarian-demining.org/">http://www.humanitarian-demining.org/</a>
<b>Status</b>	Ongoing
<b>Comments</b>	

## Ground Penetrating Radar

<b>Project Nr 2.2.2.3</b>	
<b>Title</b>	NIITEK Ground Penetrating Radar system (Minestalker).
<b>Description</b>	The <a href="#">Minestalker system</a> is a 2.4-meter Ground Penetrating Radar antenna integrated with a remote controlled platform, which can be computer controlled with GPS tracking. The system provides real time detection and marking of anti-tank landmines. The 2006 and 2007 project developed a ruggedized field ready system based on the lessons learned during the Angola operational field evaluation in November 2005. The current version has incorporated new discrimination algorithms for increased detection capability and better clutter rejection.
<b>Aim</b>	Integrate, test and evaluate the NIITEK Ground Penetrating Radar (VISOR GPR array) as a mine detector. Outcome - Prototype hardware and test report.
<b>Request</b>	Users and donors.
<b>Category</b>	Detection - GPR

Type	Test and Evaluation
Equipment	NIITEK VISOR GPR, Minestalker
Development	Prototype/Demonstrator
Time frame	2002-03-01 to 2008-12-01
Place	United States, CECOM-RDEC, NVESD, Angola
Lead nation	United States
Partners	
Point of contact	Lee Offen, <a href="mailto:lee.offen@nvl.army.mil">lee.offen@nvl.army.mil</a>
Web site	<a href="http://www.humanitarian-demining.org/">http://www.humanitarian-demining.org/</a>
Status	Ongoing
Comments	<ul style="list-style-type: none"> <li>• <a href="#">A field trial in Angola</a> occurred in fall 2005. <a href="#">Emerging results</a> of the latter trial were made available in spring 2006.</li> <li>• The system is currently in Africa for a second operational field evaluation (July - October 2007).</li> <li>• The system is scheduled to deploy to Cambodia in 2008.</li> </ul>

Project Nr 2.2.2.7	
Title	Test and evaluation of stand-alone ground penetrating radar systems
Description	Test and evaluate a stand-alone ground penetrating radar as a follow-up sensor to a metal detector.
Aim	Evaluate the usefulness of a stand-alone ground penetrating radar as a follow-up detector to a metal detector as an alternative to a dual-sensor mine detector.
Request	UNMAS
Category	Detection - GPR
Type	Test and Evaluation
Equipment	Geological Prospecting <a href="#">MIRADOR</a> and <a href="#">GEOSCOPE</a> GPR systems
Development	COTS
Time frame	2008-03-01 to 2009-12-31
Place	German Armed Forces Test Center 52, Oberjettenberg
Lead nation	Germany
Partners	TBD
Point of contact	Joachim Sigmund, <a href="mailto:JoachimSigmund@bmvg.bund.de">JoachimSigmund@bmvg.bund.de</a>
Web site	
Status	Planned
Comments	<ul style="list-style-type: none"> <li>• The project will only be executed if agreement between the ITEP Participants on the dual-sensor test protocol (Former ITEP Project 2.4.1.3) is obtained by the end of February 2008 at the latest.</li> <li>• This trial was originally also planned to be executed as a sub-trial of the</li> </ul>

	cancelled 2007 BAM/ITEP dual-sensor detector trial (Former ITEP Project 2.4.2.12)
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## Trace Explosives

### Multi-sensor

<b>Project Nr 2.4.1.2</b>	
<b>Title</b>	CEN Workshop on soil characterisation for metal detector and ground penetrating radar performance evaluation.
<b>Description</b>	Produce a second part for the CEN Workshop Agreement on Test and Evaluation of Metal Detectors ( <a href="#">CWA 14747:2003</a> ), specifically on soil characterisation for metal detector and ground penetrating radar (GPR) performance evaluation.
<b>Aim</b>	<ul style="list-style-type: none"> <li>• To establish the state of the art on the effect of soils on metal detectors, GPR and their combination;</li> <li>• To create quantitative characterisation of soil properties relevant to metal detector and GPR performance;</li> <li>• To provide a methodology for measuring the above soil properties;</li> <li>• To create a classification of soils, usable in controlled conditions to help estimate the degree to which they affect detectors;</li> <li>• To provide a system easy to apply for users in the field</li> </ul>
<b>Request</b>	CEN
<b>Category</b>	Detection - Multi-sensor
<b>Type</b>	Methodology
<b>Equipment</b>	N/A
<b>Development</b>	N/A
<b>Time frame</b>	2006-03-01 to 2008-09-31
<b>Place</b>	Belgium
<b>Lead nation</b>	Belgium ( <a href="#">RMS</a> )
<b>Partners</b>	<p>Current Workshop participants come from a variety of countries and organisations:</p> <ul style="list-style-type: none"> <li>• Belgium: the Belgian Army Bomb Disposal Unit, the Catholic University of Louvain (<a href="#">UCL</a>), The Free University of Brussels (<a href="#">VUB</a>)</li> <li>• Canada: Terrascan Geophysics</li> <li>• France: French Standards Association (<a href="#">AFNOR</a>)</li> <li>• Germany: Federal Institute for Materials Research (<a href="#">BAM</a>), Leibniz Institute for Applied Sciences (<a href="#">GGA</a>), Raumfahrt Systemtechnik GmbH (RST), <a href="#">Vallon</a></li> <li>• Italy: <a href="#">Università degli studi di Firenze</a>, Institute for Electromagnetic Sensing of the Environment (<a href="#">IREA-NCR</a>)</li> <li>• United Kingdom: <a href="#">Cranfield University</a>, Defence Science and Technology Laboratory (<a href="#">dstl</a>), <a href="#">ERA Technology</a>, Mines Advisory Group (<a href="#">MAG</a>)</li> <li>• United States: <a href="#">New Mexico Tech</a></li> <li>• Sweden: Swedish EOD and Demining Centre (<a href="#">SWEDEC</a>)</li> <li>• International organisations: European Committee for Standardisation (<a href="#">CEN</a>), Geneva International Centre for Humanitarian Demining (<a href="#">GICHD</a>), United Nations Mine Action Service (<a href="#">UNMAS</a>)</li> </ul>

<b>Point of contact</b>	Yann Yvinec, <a href="mailto:yvinec@elec.rma.ac.be">yvinec@elec.rma.ac.be</a> or Sylvie Arbouy, <a href="mailto:Sylvie.arbouy@afnor.org">Sylvie.arbouy@afnor.org</a>
<b>Web site</b>	<a href="http://www.cenorm.be/cenorm/businessdomains/technicalcommitteesworkshops/workshops/ws7part2.asp">http://www.cenorm.be/cenorm/businessdomains/technicalcommitteesworkshops/workshops/ws7part2.asp</a>
<b>Status</b>	Ongoing
<b>Comments</b>	<ul style="list-style-type: none"> <li>• The kick-off meeting for this CEN Workshop took place on the 15th of November 2006 at the CEN Management Centre (CMC) in Brussels. The <a href="#">final Business Plan</a> was approved. It describes the objectives and methodology of the CEN Workshop 7 / Part Two.</li> <li>• Technical meetings of the Workshop took place in May 2007, October 2007 and January 2008. The <a href="#">draft CEN Workshop Agreement CWA 14747/ Part Two</a> which was discussed at the January 2008 Workshop meeting is currently being amended for discussion and final approval at a Workshop plenary meeting in spring 2008.</li> <li>• Because its topic is highly technical and still in many ways in the research domain, It is very unlikely that the CWA 14747 / Part Two will be finalized mi-March 2008 as originally planned. Therefore, in consultation with the CEN BT/WG 126, a four-month extension has been asked to the European Commission which would take the project finalisation date to the end of July 2008.</li> <li>• The CEN Workshop 7 is still open to anyone with experience in soil properties, metal detectors, ground penetrating radars and test and evaluation of detectors for humanitarian demining. Registration for the Workshop can be done by sending an email to <a href="mailto:Sylvie.Arbouy">Sylvie Arbouy</a> at AFNOR.</li> </ul>

<b>Project Nr 2.4.1.3</b>	
<b>Title</b>	Develop and validate test procedures for dual-sensor mine detectors consisting of a metal detector and a ground penetrating radar
<b>Description</b>	<p>The project is planned to be carried out in two phases:</p> <ul style="list-style-type: none"> <li>• The first phase includes the preparation of an optimal reliability test design for dual sensor mine detectors based on previous trial experiences and recommendations from the ITEP Working Group on Multi Sensors (ITEP WGMS).</li> <li>• The second phase consists of the testing of available dual-sensor mine detectors in controlled conditions (laboratory and test lanes) to validate the proposed test protocol.</li> </ul>
<b>Aim</b>	Compile a final test protocol for dual sensor mine detectors
<b>Request</b>	Manufacturers, Mine Action Authorities, GICHD, UNMAS
<b>Category</b>	Detection - Multi-sensor
<b>Type</b>	Methodology
<b>Equipment</b>	Available dual sensor detectors (possible candidates: HSTAMIDS, MINEHOUND TM, ALIS)
<b>Development</b>	COTS, Prototype/Demonstrator
<b>Time frame</b>	2006-10-01 to 2008-12-31
<b>Place</b>	<a href="#">BAM</a> , Centre for Testing, Development and Training (CROMAC-CTRO - <a href="#">Benkovac test facility</a> ) (Croatia), German Armed Forces Test Center 52

	(Germany)
<b>Lead nation</b>	Germany
<b>Partners</b>	Belgium, Canada, The Netherlands, Sweden, United States, Japan Science and Technology Agency ( <a href="#">JST</a> ) - Tohoku University
<b>Point of contact</b>	Dieter Guelle, <a href="mailto:Dieter.Guelle@bam.de">Dieter.Guelle@bam.de</a>
<b>Web site</b>	
<b>Status</b>	Ongoing
<b>Comments</b>	<ul style="list-style-type: none"> <li>• The BAM/ITEP field trial to validate the developed dual-sensor test procedures was to be held from the 17th of September to the 19th of October 2007 at the Benkovac test site in Croatia (ITEP project 2.4.2.12). However, this trial had to be cancelled at the last moment due to the short term unavailability of two of the COTS dual-sensor detector systems.</li> <li>• From the 22nd to the 26th of October 2007, several dual-sensor mine detector systems developed by the Japanese Science and Technology Agency (<a href="#">JST</a>) were tested by the Croatian Mine Action Centre - Centre for Testing Development and Training (<a href="#">CROMAC-CTRO</a>) in co-operation with the JST using the draft trial protocol, developed by BAM for the cancelled ITEP dual-sensor detector trial. ITEP Representatives from Canada (DRDC) and Belgium (RMS) attended the trial to observe, comment and evaluate the test procedures used (ITEP Project 7.2.12). As the draft trial procedures developed by BAM were based on the proposal for a standard for reliability tests of dual-sensors in humanitarian demining, the CROMAC - CTRO / JST trial can be considered as a first step in the validation process of the proposed test protocol</li> <li>• The proposal for a standard for reliability tests of dual-sensors in humanitarian demining is currently being further discussed by the ITEP Working Group on Test and Evaluation of Multi Sensor Detectors (ITEP WGMS) using, amongst others, feedback from the HCR-CTRO/JST dual sensor trial. It is expected that an agreed document will be obtained by the end of February 2008. .</li> </ul>

<b>Project Nr 2.4.2.1</b>	
<b>Title</b>	Development of the HD version of the Handheld STAnd-off Mine Detection System (HSTAMIDS).
<b>Description</b>	The Handheld STAnd-off Mine Detection System (HSTAMIDS) is a dual sensor detection system, integrating Ground Penetrating Radar and pulsed metal detector. This ongoing project will modify the current HSTAMIDS hardware for a tailored, low cost demining version and improve or add region specific algorithms and algorithms to search for deep buried mines and UXOs to increase the detection rate in the humanitarian demining environment.
<b>Aim</b>	Improve, develop, test and evaluate a humanitarian demining Handheld STAnd-off Mine Detection System (HSTAMIDS) mine detector. Outcome - Improved prototype hardware and test report.
<b>Request</b>	Users, Donors, Developer, Manufacturer.
<b>Category</b>	Detection - Multi-sensor
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	HD - <a href="#">Handheld STAnd-off Mine Detection System (HSTAMIDS)</a>



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<b>Development</b>	Prototype/Demonstrator
<b>Time frame</b>	2003-01-01 to 2008-12-31
<b>Place</b>	United States, CECOM-RDEC, NVESD, Humanitarian Demining Test Facility, Ft. AP Hill, VA.
<b>Lead nation</b>	United States
<b>Partners</b>	
<b>Point of contact</b>	Lee Offen, <a href="mailto:lee.offen@nvl.army.mil">lee.offen@nvl.army.mil</a>
<b>Web site</b>	<a href="http://www.humanitarian-demining.org/">http://www.humanitarian-demining.org/</a>
<b>Status</b>	Ongoing
<b>Comments</b>	

<b>Project Nr 2.4.2.9</b>	
<b>Title</b>	Discriminating Mine Detector (DMD)
<b>Description</b>	This project will design and develop a handheld detector using the hardware/software enhancement components and lessons learned from the HSTAMIDS. Accelerometers to aid in training will be part of the improved system.
<b>Aim</b>	Develop, test and evaluate an enhanced dual sensor detector. Outcome - Prototype hardware and a test report.
<b>Request</b>	Develop, test and evaluate an enhanced detector. Outcome - prototype hardware and a test report.
<b>Category</b>	Detection - Multi-sensor
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	N/A
<b>Development</b>	COTS
<b>Time frame</b>	2006-01-01 to 2008-12-31
<b>Place</b>	United States, US CECOM-RDEC, NVESD, Countermine Division, Ft. Belvoir, VA, Humanitarian Demining Test Facility Ft. AP Hill, VA, and other countries (TBD).
<b>Lead nation</b>	United States
<b>Partners</b>	
<b>Point of contact</b>	Lee Offen, <a href="mailto:lee.offen@nvl.army.mil">lee.offen@nvl.army.mil</a>
<b>Web site</b>	
<b>Status</b>	Ongoing
<b>Comments</b>	Trials are ongoing

<b>Project Nr 2.4.2.13</b>	
<b>Title</b>	Evaluate the performance of dual-sensor detector in humanitarian demining as compared to stand-alone metal detectors
<b>Description</b>	The trial will consist of a reliability trial in which the performance of available dual-sensor detectors (probability of detection and false alarm rate) will be assessed as compared to the corresponding stand-alone metal detectors.
<b>Aim</b>	Assess the ability of the added ground penetrating radar detector in a dual-sensor mine detector to reduce the false alarm rate in comparison to stand-alone metal detectors.
<b>Request</b>	German Ministry of Foreign Affairs, German Armed Forces, Mine Action Authorities, GICHD, UNMAS
<b>Category</b>	Detection - Multi-sensor
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	Dual sensor detectors available for testing ( <a href="#">MINEHOUND TM</a> , <a href="#">ALIS</a> )
<b>Development</b>	COTS, Prototype
<b>Time frame</b>	2008-03-01 to 2009-12-31
<b>Place</b>	German Armed Forces Test Center 52, Oberjettenberg
<b>Lead nation</b>	Germany
<b>Partners</b>	TBD
<b>Point of contact</b>	Joachim Sigmund, <a href="mailto:JoachimSigmund@bmvg.bund.de">JoachimSigmund@bmvg.bund.de</a>
<b>Web site</b>	
<b>Status</b>	Planned
<b>Comments</b>	<ul style="list-style-type: none"> <li>• The ITEP Participants agreed in principle on a way ahead to draft the dual-sensor test protocol at the February 2008 meeting of the ITEP Working Group on Test and Evaluation of Multi(Dual)-Sensors (ITEP WGMS). This way ahead was also endorsed by the ITEP ExCom. Previous disagreement amongst the ITEP Participants on the dual-sensor test protocol had been one of the reasons for the cancellation of the 2007 dual-sensor detector trial (ITEP Project 2.4.1.3)</li> <li>• The project will also serve to validate the proposed dual-sensor test guidelines, final product of Former ITEP Project 2.4.1.3.</li> <li>• The project is the same as the project that was planned to be executed last year in Croatia (Former ITEP Project 2.4.2.12) but cancelled due to the short term unavailability of the dual-sensor mine detectors. The German Armed Forces take over the responsibility from the German Institute for Materials Testing (BAM) for the execution of this project as BAM has ceased all activities related to test and evaluation of humanitarian demining equipment at the end of 2007.</li> </ul>

<b>Project Nr 2.4.2.11</b>	
<b>Title</b>	Handheld STAnd-off MIne Detection System (HSTAMIDS) Long Term Operational Evaluations.
<b>Description</b>	This project deploys the current Handheld STAnd-off MIne Detection System (HSTAMIDS) for Long Term Operational Evaluations in a variety of humanitarian

	demining locations. Long Term Operational Evaluations have taken place in Afghanistan and Thailand, and are ongoing in Cambodia. During these evaluations, the system is operationally employed as a primary and sole detector in minefields for an extended period (up to a year) by local deminers. Data is collected on system and operator performance.
<b>Aim</b>	Long Term Operational Evaluations of the Handheld STAnd-off MIne Detection System (HSTAMIDS) handheld detector. Outcome - Test and evaluation report.
<b>Request</b>	Users, Donors, NMAAs
<b>Category</b>	Detection - Multi-sensor
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	Handheld STAnd-off MIne Detection System ( <a href="#">HSTAMIDS</a> )
<b>Development</b>	COTS (fielded military system, to be used in humanitarian demining by special arrangement with the U.S.Department of Defense)
<b>Time frame</b>	2006-03-01 to 2008-12-31
<b>Place</b>	Thailand, Afghanistan, Cambodia
<b>Lead nation</b>	United States
<b>Partners</b>	<a href="#">Halo Trust</a> , Mines Advisory Group ( <a href="#">MAG</a> ), Cambodian Mine Action Centre ( <a href="#">CMAC</a> ), Thailand Mine Action Centre ( <a href="#">TMAC</a> )
<b>Point of contact</b>	Lee Offen, <a href="mailto:lee.offen@nvl.army.mil">lee.offen@nvl.army.mil</a>
<b>Web site</b>	<a href="http://www.humanitarian-demining.org/">http://www.humanitarian-demining.org/</a>
<b>Status</b>	Ongoing
<b>Comments</b>	<ul style="list-style-type: none"> <li>• This project is complementary to the Handheld STAnd-off MIne Detection System (HSTAMIDS) Operational Field Trials and Demonstration project (<a href="#">ITEP Work Plan</a>, Project 2.4.2.6).</li> <li>• Cambodia: the Long Term Operational Field Evaluation (start: April 2006) with MAG is still ongoing. The MAG training is complete and the system is in use. Halo Trust established a HSTAMIDS training facility in Cambodia.</li> <li>• Evaluations have been completed in Afghanistan (May-July 2006) and Thailand (September 2006 - March 2007) with the Halo Trust and TMAC respectively. Halo Trust is currently training deminers for deployment in Afghanistan.</li> <li>• A <a href="#">fact sheet</a> issued by the U.S. Department of State provides a summary of results obtained during the Operational Trials and Demonstration project (<a href="#">ITEP Work Plan</a> Project 2.4.2.6), as well as some preliminary results from the Long Term Operational Evaluation project (<a href="#">ITEP Work Plan</a>, Project 2.4.2.11). More test results can be found in a <a href="#">presentation</a> available at the UNMAS website</li> </ul>

## Others

<b>Project Nr 2.5.2.5</b>	
<b>Title</b>	Handheld sweep magnet
<b>Description</b>	Develop a handheld magnet to remove excessive ferrous contamination from on or near the surface.
<b>Aim</b>	Outcome - Prototype hardware
<b>Request</b>	Users, Donors.



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<b>Category</b>	Detection - Others
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	Handheld sweep magnet
<b>Development</b>	COTS
<b>Time frame</b>	2005-03-01 to 2008-04-01
<b>Place</b>	United States, CECOM-RDEC, NVESD, Ft. Belvoir, VA, Ft. AP Hill, VA.
<b>Lead nation</b>	United States
<b>Partners</b>	
<b>Point of contact</b>	Lee Offen, <a href="mailto:lee.offen@nvl.army.mil">lee.offen@nvl.army.mil</a>
<b>Web site</b>	<a href="http://www.humanitarian-demining.org/">http://www.humanitarian-demining.org/</a>
<b>Status</b>	Ongoing
<b>Comments</b>	The prototype underwent a field evaluation by the Netherlands ( <a href="#">ITEP Work Plan, Project 2.5.2.6</a> )
<b>Results/conclusions</b>	

### 2.3.3 MECHANICAL ASSISTANCE

Project Nr	Title	Lead
	<b>Methodology</b>	
	<b>Test and Evaluation</b>	
3.1.4	Methodology for the test and evaluation of mobile robotics for the detection of AP mines. <i>Ongoing</i>	BE
3.2.6	Tempest <i>Ongoing</i>	US
3.2.9	Test, evaluate and upgrade the Mini-Mulcher (MAXX). <i>Ongoing</i>	US
3.2.31	Mini-Mulcher (MAXX+) <i>Ongoing</i>	US
3.2.13	HALO Trust mechanical equipment development. <i>Ongoing</i>	US
3.2.20	Multi-Tooled Excavator <i>Ongoing</i>	US
3.2.38	Robotic Mine Detector (100 Bot). <i>Ongoing</i>	US
3.2.39	Rapid Area Preparation Tool (RAPTOR) <i>Ongoing</i>	US
3.2.40	Severe Terrain Off Route Menzi-Muck (STORM) <i>Ongoing</i>	US
3.2.45	MV 10 Test and Evaluation <i>Planned</i>	SE
3.2.46	Flail fundamentals <i>Ongoing</i>	CA

<b>Project Nr 3.1.4</b>	
<b>Title</b>	Methodology for the test and evaluation of mobile robotics for the detection of AP mines.
<b>Description</b>	Establishment of detailed minimal requirements, standards and procedures for the testing of robotics systems for mine detection.
<b>Aim</b>	Organisation of a multi-year test and evaluation program.
<b>Request</b>	International Advanced Robotics Program (IARP)
<b>Category</b>	Mechanical Assistance
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	N/A
<b>Development</b>	N/A
<b>Time frame</b>	2003-05-01 to 2008-12-31
<b>Place</b>	Belgium, Royal Military School (RMS)
<b>Lead nation</b>	Belgium
<b>Partners</b>	International Advanced Robotics Program (IARP)
<b>Point of contact</b>	Yvan Baudoin, <a href="mailto:yvan.baudoin@rma.ac.be">yvan.baudoin@rma.ac.be</a>
<b>Web site</b>	<a href="http://mecatron.rma.ac.be">http://mecatron.rma.ac.be</a>
<b>Status</b>	Ongoing

<b>Comments</b>	<ul style="list-style-type: none"> <li>• Seven IARP (International Advanced Robotics Programme) workshops have been organized to date: five scientific workshops (Toulouse 1998, Vienna 2002, Brussels 2004, Tokyo 2005, Brussels 2006) and two on-site workshops (Zimbabwe/Mozambique 1999, Prishtina 2003). The <a href="#">Tokyo proceedings</a> are accessible via the ITEP reports database.</li> <li>• The <a href="#">next IARP HUDEM Workshop</a> will be held in Cairo, Egypt from the 28th to the 20th of March 2008.</li> <li>• A study of the modular architecture of a mobile robot and the operational and technical requirements for robotic systems in humanitarian demining is ongoing.</li> <li>• An update of the list of current projects concerning mobile roboticised detection platforms is ongoing (deadline May 2008)</li> <li>• A <a href="#">summary report</a> on trends, promising tools and requirements for robotic systems, including an overview of available prototype robotic platforms for HMA, was published in December 2005.</li> <li>• Although robots are promising systems for some detection tasks, only developmental and prototypes are currently available. Furthermore, only limited on-site tests have been executed (described in the proceedings of the IARP Workshops, available at the above-listed website). The definition of an official ITEP test campaign is therefore still pre-mature.</li> </ul>
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<b>Project Nr 3.2.6</b>	
<b>Title</b>	Tempest
<b>Description</b>	The Tempest is a small commercial-off-the-shelf remote controlled system for medium vegetation clearance, metal debris reduction and tripwire elimination.
<b>Aim</b>	In country operational field trail of the Tempest. Outcome - Test report.
<b>Request</b>	Users, Donors, NGOs, NMAAs
<b>Category</b>	Mechanical Assistance
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	<a href="#">Tempest</a>
<b>Development</b>	COTS/Prototype
<b>Time frame</b>	2002-03-01 to 2008-12-31
<b>Place</b>	Thailand, Mozambique, Cambodia, Ecuador
<b>Lead nation</b>	United States
<b>Partners</b>	Accelerated Demining Program Mozambique (ADP), Thailand Mine Action Centre ( <a href="#">TMAC</a> ), Cambodian Mine Action Centre ( <a href="#">CMAC</a> ), Mines Advisory Group ( <a href="#">MAG</a> ), <a href="#">Halo Trust</a> , National Demining Center of Ecuador
<b>Point of contact</b>	Lee Offen, <a href="mailto:lee.offen@nvl.army.mil">lee.offen@nvl.army.mil</a>
<b>Web site</b>	<a href="http://www.humanitarian-demining.org/">http://www.humanitarian-demining.org/</a>
<b>Status</b>	Ongoing
<b>Comments</b>	<p>The current Tempest system is a product of several years of development and test and evaluation:</p> <ul style="list-style-type: none"> <li>• 1999 - Contractor development of Tempest Mk1&amp;2 prototypes attracted NV sponsorship (Exploratory)</li> <li>• May 2000 - Vegetation clearance rates and blast survivability documented</li> </ul>

	<p>(Proof of Performance)</p> <ul style="list-style-type: none"> <li>• Oct 2000 -Two units deployed to TMAC. Development of Mk4 (Operational Field Evaluation)</li> <li>• 2001 - New Mk4 unit trialed with automotive performance testing and additional design refinement in Cambodia (Limited Functional-Technical)</li> <li>• Jan 2002 - Mk 4 redeployed to Thailand (Operational Field Evaluation)</li> <li>• Jan 2002 - Mk4 deployed to Mozambique (Accelerated Demining Program). Development of MK5 (Operational Field Evaluation)</li> <li>• Jul 2004 - Tracked Mk5 planned deployment to Mozambique (Operational Field Evaluation)</li> <li>• Oct 2004 - Planned product improvements for Thailand and Mozambique</li> <li>• 2005/2006 - Thailand and Cambodia (Operational Field Evaluation)</li> <li>• 2006/2007 - Operational field evaluation with Mines Advisory Group (MAG)</li> <li>• 2007/2008 – Ongoing operational field evaluations of the upgraded Tempest MK 6 in Cambodia, Thailand and Ecuador.</li> </ul>
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<b>Project Nr 3.2.9</b>	
<b>Title</b>	Test, evaluate and upgrade the Mini-Mulcher (MAXX).
<b>Description</b>	The <a href="#">MAXX Mini-Mulcher</a> is a remote controlled excavator based system for medium vegetation clearance. It has been deployed for operational field trials in Rwanda and Namibia. Upgrades have been completed and the machine is currently being deployed in Guinea-Bissau.
<b>Aim</b>	Upgrade, test and evaluate a mini-vegetation clearance system in-country. Outcome - Enhanced Mini-Mulcher unit and test report.
<b>Request</b>	Users, Donors, NGOs, NMAAs
<b>Category</b>	Mechanical Assistance
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	<a href="#">HEC MAXX Mine Clearance Multi Tool</a>
<b>Development</b>	COTS/Prototype
<b>Time frame</b>	2002-04-01 to 2008-12-31
<b>Place</b>	United States, CECOM-RDEC, NVESD, Namibia
<b>Lead nation</b>	United States
<b>Partners</b>	National Mine Action Coordination Centre of Guinea Bissau, People Against Landmines ( <a href="#">MgM</a> )
<b>Point of contact</b>	Lee Offen, <a href="mailto:lee.offen@nvl.army.mil">lee.offen@nvl.army.mil</a>
<b>Web site</b>	<a href="http://www.humanitarian-demining.org/">http://www.humanitarian-demining.org/</a>
<b>Status</b>	Ongoing
<b>Comments</b>	<p>The Mini-Mulcher MAXX is a product of several years of development and test and evaluation:</p> <ul style="list-style-type: none"> <li>• 2003 - Concept exploration performed on the MAXX+ (Exploratory)</li> <li>• March 2004: Namibia trial (Limited Functional - Technical)</li> <li>• Summer 2004: Proof of Performance</li> <li>• October 2004 - October 2005: Namibia and Rwanda Operational Field</li> </ul>

	<p>Evaluations</p> <ul style="list-style-type: none"> <li>• Since January 2006 - Ongoing Operational Field Evaluation in Guinea Bissau</li> </ul> <p>The research and development section of the <a href="#">MgM website</a> and the <a href="#">HEC website</a> provide an overview of the development history of the MAXX multi-tool system, as well as information on the 2005 operational field evaluation in Rwanda.</p>
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<b>Project Nr 3.2.31</b>	
<b>Title</b>	Mini-Mulcher (MAXX+)
<b>Description</b>	The <a href="#">MAXX+</a> is a small, remote-controlled, excavator-based mechanical system for medium vegetation clearance and soil sifting in various environments. It also uses interchangeably a mulcher, sifting fork, rotar bucket, and standard construction style bucket. Its “reach-in” configuration places tools at the end of a 360 rotating articulating arm to clear vegetation with a 5 meter reach. Operational field evaluation of the MAXX+ began in Cambodia in November 2006.
<b>Aim</b>	Test and evaluate a mini-vegetation clearance system in-country. Outcome - Test report.
<b>Request</b>	Users, Donors, NGOs, NMAAs
<b>Category</b>	Mechanical Assistance
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	<a href="#">HEC MAXX+ Mine Clearance Multi Tool</a>
<b>Development</b>	COTS/Prototype
<b>Time frame</b>	2005-07-01 to 2008-12-31
<b>Place</b>	United States, CECOM-RDEC, NVESD, Sri Lanka, Cambodia
<b>Lead nation</b>	United States
<b>Partners</b>	Mines Advisory Group ( <a href="#">MAG</a> ), People Against Landmines ( <a href="#">MgM</a> )
<b>Point of contact</b>	Lee Offen, <a href="mailto:lee.offen@nvl.army.mil">lee.offen@nvl.army.mil</a>
<b>Web site</b>	<a href="http://www.humanitarian-demining.org/">http://www.humanitarian-demining.org/</a>
<b>Status</b>	Ongoing
<b>Comments</b>	<ul style="list-style-type: none"> <li>• 2005 - 2006: Operational field evaluation in Sri Lanka. Training of Sri Lankan Army demining team in July and August 2005.</li> <li>• 2007: Ongoing Operational field evaluation with MAG in Cambodia.</li> <li>• The <a href="#">research and development section of the MgM website</a> and the <a href="#">HEC website</a> also provide an overview of the development history of the MAXX multi-tool system</li> </ul>

<b>Project Nr 3.2.13</b>	
<b>Title</b>	HALO Trust mechanical equipment development.
<b>Description</b>	This is an ongoing HALO Trust partnership with the Mechanical Assistance Equipment (MAE) developing community. As a part of this project, an operational field evaluation of the Rotary Mine Comb in Angola is ongoing as is the operational field evaluation of the TEMPEST system in Cambodia.
<b>Aim</b>	Modify, test and evaluate mechanical equipment with HALO Trust. Outcome - Prototype hardware and test report.
<b>Request</b>	Users, Donors, NGOs, NMAAs, Developer, Manufacturer, HALO Trust
<b>Category</b>	Mechanical Assistance
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	<a href="#">SETCO tires</a> , <a href="#">Rotary Mine Comb</a> remote control and host platforms.
<b>Development</b>	COTS/Prototype
<b>Time frame</b>	2003-03-01 to 2008-12-31
<b>Place</b>	United States, CECOM-RDEC, NVESD, Angola, Cambodia
<b>Lead nation</b>	United States
<b>Partners</b>	<a href="#">HALO Trust</a>
<b>Point of contact</b>	Lee Offen, <a href="mailto:lee.offen@nvl.army.mil">lee.offen@nvl.army.mil</a>
<b>Web site</b>	<a href="http://www.humanitarian-demining.org/">http://www.humanitarian-demining.org/</a>
<b>Status</b>	Ongoing
<b>Comments</b>	The <a href="#">Rotary Mine Comb</a> began an operational field evaluation in Angola in the fall of 2006. A second system with remote operation will be undergoing preliminary trials in August 2007

<b>Project Nr 3.2.20</b>	
<b>Title</b>	Multi-Tooled Excavator
<b>Description</b>	The <a href="#">system</a> is a large armored excavator (20 tons) capable of extracting deeply buried mines using various COTS digging and sifting attachments
<b>Aim</b>	Armour a medium sized excavator and evaluate multiple modified commercial attachments. Outcome - Prototype hardware and test report based on operational field evaluations in several countries.
<b>Request</b>	Users, Donors, NGOs.
<b>Category</b>	Mechanical Assistance
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	Armoured medium excavator with attachments (ALLU bucket, Rotar bucket, vibratory rake).
<b>Development</b>	COTS



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<b>Time frame</b>	2004-01-01 to 2008-07-01
<b>Place</b>	United States, CECOM-RDEC, NVESD, Ft. Belvoir, VA, Ft. AP Hill, VA., Cambodia, Chile
<b>Lead nation</b>	United States
<b>Partners</b>	Cambodian Mine Action Centre ( <a href="#">CMAC</a> ) , <a href="#">Chilean National Demining Commission</a> , <a href="#">Halo Trust</a>
<b>Point of contact</b>	Lee Offen, <a href="mailto:lee.offen@nvl.army.mil">lee.offen@nvl.army.mil</a>
<b>Web site</b>	<a href="http://www.humanitarian-demining.org/">http://www.humanitarian-demining.org/</a>
<b>Status</b>	Ongoing
<b>Comments</b>	<ul style="list-style-type: none"> <li>• This is a follow-on of the Humanitarian Demining Sifting Excavator project (ITEP project 3.2.14)</li> <li>• Some of the attachments have undergone an operational field evaluation in Honduras and Cambodia. An operational field evaluation in Chile is ongoing.</li> </ul>

<b>Project Nr 3.2.38</b>	
<b>Title</b>	Robotic Mine Detector (100 Bot).
<b>Description</b>	The system is a remote controlled lightweight commercial tracked vehicle that detects and marks mines/UXO. It is capable of carrying various arrays and small mechanical vegetation and area reduction attachments. The system has a ground mapping and self navigation capability. The system currently has an integrated large loop metal detector for UXO and high metallic mine detection (Ebinger Large Loop UPEX 740MV array)
<b>Aim</b>	Develop, test and evaluate an enhanced detector. Outcome - Prototype hardware and a test report.
<b>Request</b>	Users, Donors, NMAAs, NGOs.
<b>Category</b>	Mechanical Assistance
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	Robotic Mine Detector ( <a href="#">100-Bot</a> ), <a href="#">Ebinger Large Loop UPEX 740MV array</a>
<b>Development</b>	COTS
<b>Time frame</b>	2006-01-01 to 2008-12-31
<b>Place</b>	United States, US CECOM-RDEC, NVESD, Countermine Division, Ft. Belvoir, VA, Humanitarian Demining Test Facility Ft. AP Hill, VA, and other countries (TBD).
<b>Lead nation</b>	United States
<b>Partners</b>	
<b>Point of contact</b>	Lee Offen, <a href="mailto:lee.offen@nvl.army.mil">lee.offen@nvl.army.mil</a>
<b>Web site</b>	<a href="http://www.humanitarian-demining.org/">http://www.humanitarian-demining.org/</a>
<b>Status</b>	Ongoing
<b>Comments</b>	The system is scheduled to deploy to Cambodia in 2008

<b>Project Nr 3.2.39</b>	
<b>Title</b>	Rapid Area Preparation Tool (RAPTOR)
<b>Description</b>	This project will develop a new system based on the lessons learned from the MANTIS deployment in Nicaragua ( <a href="#">ITEP Work Plan</a> project 3.2.5) using a COTS John Deere chassis with a suite of commercial and specialized attachments for area reduction and preparation. The <a href="#">rotary mine comb</a> is one of the attachments that will be integrated with this system. It is anticipated that the system will be developed and ready for an operational field evaluation by Halo Trust in 2007.
<b>Aim</b>	Develop, test and evaluate an enhanced mechanical area preparation and reduction system. Outcome - Prototype hardware and a test report.
<b>Request</b>	Users, Donors, NMAAs, NGOs.
<b>Category</b>	Mechanical Assistance
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	<a href="#">RAPTOR</a>
<b>Development</b>	COTS
<b>Time frame</b>	2006-01-01 to 2008-12-31
<b>Place</b>	United States, US CECOM-RDEC, NVESD, Countermining Division, Ft. Belvoir, VA, Humanitarian Demining Test Facility Ft. AP Hill, VA, and other countries (TBD).
<b>Lead nation</b>	United States
<b>Partners</b>	<a href="#">HALO Trust</a>
<b>Point of contact</b>	Lee Offen, <a href="mailto:lee.offen@nvl.army.mil">lee.offen@nvl.army.mil</a>
<b>Web site</b>	<a href="http://www.humanitarian-demining.org/">http://www.humanitarian-demining.org/</a>
<b>Status</b>	Ongoing
<b>Comments</b>	Trials are ongoing (September - December 2007)

<b>Project Nr 3.2.40</b>	
<b>Title</b>	Severe Terrain Off Route Menzi-Muck (STORM)
<b>Description</b>	This project will include modification and testing of the <a href="#">COTS Menzi Muck high mobility mechanical excavator</a> , identified as STORM. The system is capable of working on very uneven terrain and on slopes of up to 70 degrees. The modifications to the COTS system include an armored cab, blast resistant tires and a suite of commercial attachments. The suite of tools include vegetation removal, soil sifting, soil grinding, and material handling attachments. It is projected that STORM will be ready for an operational field assessment in 2008.
<b>Aim</b>	Develop, test and evaluate STORM. Outcome - Prototype hardware and a test report.
<b>Request</b>	Users, Donors, NMAAs NGOs.
<b>Category</b>	Mechanical Assistance

<b>Type</b>	Test and Evaluation
<b>Equipment</b>	<a href="#">STORM</a>
<b>Development</b>	COTS
<b>Time frame</b>	2006-01-01 to 2008-12-31
<b>Place</b>	United States, US CECOM-RDEC, NVESD, Countermine Division, Ft. Belvoir, VA, Humanitarian Demining Test Facility Ft. AP Hill, VA, and other countries (TBD).
<b>Lead nation</b>	United States
<b>Partners</b>	
<b>Point of contact</b>	Lee Offen, <a href="mailto:lee.offen@nvl.army.mil">lee.offen@nvl.army.mil</a>
<b>Web site</b>	<a href="http://www.humanitarian-demining.org/">http://www.humanitarian-demining.org/</a>
<b>Status</b>	Ongoing
<b>Comments</b>	STORM is is under consideration for a deployment to Thailand

<b>Project Nr 3.2.45</b>	
<b>Title</b>	MV 10 Test and Evaluation
<b>Description</b>	Performance and survivability testing of the <a href="#">MV-10</a> according to the CEN Workshop on Test and Evaluation of Demining Machines ( <a href="#">CWA 15044:2004</a> ) test guidelines.
<b>Aim</b>	To establish CWA 15044 characteristics of the modified MV-10
<b>Request</b>	Manufacturer
<b>Category</b>	Mechanical Assistance
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	DOK-ING MV-10
<b>Development</b>	COTS
<b>Time frame</b>	2008-05-01 to 2008-05-31
<b>Place</b>	SWEDEC Norra Kulla test range in Eksjö (Sweden)
<b>Lead nation</b>	Sweden
<b>Partners</b>	TBD
<b>Point of contact</b>	Bo Malmberg, <a href="mailto:bo.malmberg@mil.se">bo.malmberg@mil.se</a>
<b>Web site</b>	
<b>Status</b>	Planned
<b>Comments</b>	Canada (Defence Research and Development - DRDC) in co-operation with the Croatian Mine Action centre - Centre for testing Development and Training (CROMAC - CTRO) carried out a CWA performance test of the MV-10 in summer 2006 ( <a href="#">ITEP Project 3.2.35</a> ). The manufacturer made some modifications of both the machine and the SOP for the driver and has requested a new CWA 15044 test.

<b>Project Nr 3.2.46</b>	
<b>Title</b>	Flail fundamentals
<b>Description</b>	Investigating interaction of such factors as chain length, hammer shape and weight, rotational speed, forward speed, power consumption, etc.
<b>Aim</b>	To understand the factors influencing flail performance
<b>Request</b>	Canada, Defence Research and Development Canada – Suffield (DRDC – Suffield)
<b>Category</b>	Mechanical Assistance
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	Generic flails
<b>Development</b>	COTS
<b>Time frame</b>	2006-06-01 to 2010-12-31
<b>Place</b>	Canada, Defence Research and Development Canada – Suffield (DRDC – Suffield)
<b>Lead nation</b>	Canada
<b>Partners</b>	
<b>Point of contact</b>	Geoff Coley, <a href="mailto:geoff.Coley@drdc-rddc.gc.ca">geoff.Coley@drdc-rddc.gc.ca</a>
<b>Web site</b>	
<b>Status</b>	Ongoing
<b>Comments</b>	

### 2.3.4 MANUAL TOOLS

### 2.3.5 PERSONAL PROTECTION

Project Nr	Title	Lead
	<b>Methodology</b>	
	<b>Test and Evaluation</b>	
5.2.5	Test and Evaluation of Personal Protective Equipment <i>Planned</i>	SE
5.2.4	Visor Heat Treatment <i>Ongoing</i>	CA

<b>Project Nr 5.2.5</b>	
<b>Title</b>	Test and Evaluation of Personal Protective Equipment
<b>Description</b>	Perform PPE blast tests according to the CEN Workshop Agreement on Test and Evaluation of Protective Equipment ( <a href="#">CWA 15756:2007</a> )
<b>Aim</b>	To experimentally validate the CEN Workshop Agreement on Test and Evaluation of Protective Equipment (CWA 15756:2007) and to produce data on the blast performance of PPE equipment
<b>Request</b>	User community, UNMAS
<b>Category</b>	Personal Protection
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	Various PPE
<b>Development</b>	COTS
<b>Time frame</b>	0000-00-00 to 0000-00-00
<b>Place</b>	SWEDEC (Sweden)
<b>Lead nation</b>	Sweden
<b>Partners</b>	TBD
<b>Point of contact</b>	Curt Larsson, <a href="mailto:curt.larsson@mil.se">curt.larsson@mil.se</a>
<b>Web site</b>	
<b>Status</b>	Planned
<b>Comments</b>	

<b>Project Nr 5.2.4</b>	
<b>Title</b>	Visor Heat Treatment
<b>Description</b>	The Journal of Mine Action (JMA) article <a href="#">Visor Scratch Repair and Prevention</a> (Issue 10.2, pages 96–99) proposed a method for repairing scratch-damaged visors. There is a concern that the proposed treatment could make the visors brittle. A series of tests executed by Defence Research and Development Canada (DRDC) will determine whether this is a concern or not.



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<b>Aim</b>	To verify whether the proposed heat treatment makes visors brittle.
<b>Request</b>	Demining community, UNMAS
<b>Category</b>	Personal Protection
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	Scratched visors
<b>Development</b>	Research/Development
<b>Time frame</b>	2008-01-01 to 2008-03-31
<b>Place</b>	DRDC Suffield, Canada
<b>Lead nation</b>	Canada
<b>Partners</b>	
<b>Point of contact</b>	Chris Weickert, <a href="mailto:Chris.Weickert@drdc-rddc.gc.ca">Chris.Weickert@drdc-rddc.gc.ca</a>
<b>Web site</b>	
<b>Status</b>	Ongoing
<b>Comments</b>	

### 2.3.6 NEUTRALIZATION

Project Nr	Title	Lead
6.1	Methodology	
6.2	Test and Evaluation	
6.2.11	Explosive Harvesting System (EHS) <i>Ongoing</i>	US

<b>Project Nr 6.2.11</b>	
<b>Title</b>	Explosive Harvesting System (EHS)
<b>Description</b>	The initial <a href="#">Explosive Harvesting System</a> is a three 20 foot ISO container based, three stage facility to allow for the safe harvesting of TNT explosives from AT mines, large caliber projectiles, air dropped bombs and recasting it into disposal charges and specialized items such as platters, shaped and bulk linear charges for in-situ mine neutralization. A second mobile <i>fly away</i> system with the same capability has been developed, as well. The EHS is currently providing new bulk explosives for evaluation by Mines Advisory Group (MAG), Halo Trust and the Cambodian Mine Action Centre (CMAC) in Cambodia.
<b>Aim</b>	Test and evaluate the explosive harvesting facility in-country. Outcome - test report.
<b>Request</b>	Users, Donors, NGOs, NMAAs
<b>Category</b>	Neutralization
<b>Type</b>	Test and Evaluation
<b>Equipment</b>	Explosive Harvesting System (EHS)
<b>Development</b>	COTS/Prototype
<b>Time frame</b>	2005-01-01 to 2008-12-31
<b>Place</b>	Cambodia, Angola, Yemen, Guinea-Bissau, Vietnam
<b>Lead nation</b>	United States
<b>Partners</b>	<a href="#">Golden West Humanitarian Foundation</a> , Cambodian Mine Action Centre ( <a href="#">CMAC</a> ), Mines Advisory Group ( <a href="#">MAG</a> ), <a href="#">Halo Trust</a>
<b>Point of contact</b>	Lee Offen, <a href="mailto:lee.offen@nvl.army.mil">lee.offen@nvl.army.mil</a>
<b>Web site</b>	<a href="http://www.humanitarian-demining.org/">http://www.humanitarian-demining.org/</a>
<b>Status</b>	Ongoing
<b>Comments</b>	<ul style="list-style-type: none"> <li>• Partnership between the U.S. Humanitarian Demining Research and Development Program, Golden West Humanitarian Foundation and CMAC,</li> <li>• Site located at CMAC Kampong Chhnang Training Center,</li> <li>• Site assessment in Feb 2005,</li> <li>• Demonstration to delegations from S.E. Asia, the U.S., and Japan in Aug 2005,</li> <li>• High interest expressed by deminers around the world,</li> <li>• Royal Cambodian Armed Forces offered 11 tons of munitions for disposal.</li> <li>• Mobile <i>fly away kits</i> are being evaluated in Guinea-Bissau, Yemen and</li> </ul>



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Vietnam, and will deploy to Angola in 2008.

- Afghan personnel is being trained on fly away kits in 2008.
- 35 748 charges provided to HALO, CMAC and MAG as of Nov 2007

The project distributes regular newsletters with an update on activities and results:

- [September 2005](#),
- [November 2005](#),
- [June 2006](#)

More information on the project can also been found in an article published in the [Mine Action Technology Newsletter, issue 5](#) and the [Journal of Mine Action, Issue 10.2](#)

### 2.3.7 SERVICES

Project Nr	Title	Lead
<b>7.1</b>	<b>Input</b>	
7.1.2	Collect test reports and information on national programs. <i>Ongoing</i>	IS
7.1.3	Establish contacts with mine action partners world wide. <i>Ongoing</i>	IS
7.1.4	Lessons learned from test and evaluation. <i>Ongoing</i>	IS
<b>7.2</b>	<b>Output</b>	
7.2.1	Follow up on requests for advice on test and evaluation procedures. <i>Standby</i>	TBD
7.2.2	Maintenance and upgrade of the ITEP website. <i>Ongoing</i>	IS
7.2.3	Humanitarian Demining Research and Development technologies information materials and website. <i>Ongoing</i>	US
7.2.5	Support to the Geneva International Centre for Humanitarian Demining (GICHD) detection and mechanical equipment catalogues. <i>Ongoing</i>	IS

<b>Project Nr 7.1.2</b>	
<b>Title</b>	Collect test reports and information on national programs.
<b>Description</b>	The Secretariat has been tasked to collect, maintain and distribute information on test reports and national programs.
<b>Aim</b>	To collect and maintain a working database of relevant test reports and national programs.
<b>Request</b>	ITEP Executive Committee
<b>Category</b>	Services
<b>Type</b>	Input
<b>Equipment</b>	N/A
<b>Development</b>	N/A
<b>Time frame</b>	2000-07-31 to 2010-07-31
<b>Place</b>	Secretariat ITEP
<b>Lead nation</b>	ITEP Secretariat
<b>Partners</b>	All ITEP Participants and other entities producing HD demining equipment test reports
<b>Point of contact</b>	ITEP Secretariat, <a href="mailto:secretariat@itep.ws">secretariat@itep.ws</a>
<b>Web site</b>	<a href="http://www.itep.ws">http://www.itep.ws</a>
<b>Status</b>	Ongoing
<b>Comments</b>	<ul style="list-style-type: none"> <li>• The collected test reports and publications are available on the <a href="#">ITEP Reports website</a>.</li> <li>• Information on the national test and evaluation activities of the ITEP Participants can be found in the <a href="#">ITEP Work Plan</a>.</li> </ul>

<b>Project Nr 7.1.3</b>	
<b>Title</b>	Establish contacts with mine action partners world wide.
<b>Description</b>	Establish contacts with mine action partners world wide through the ITEP Secretariat and liaison officers.
<b>Aim</b>	To collect user needs and feedback on ITEP activities.
<b>Request</b>	ITEP Executive Committee
<b>Category</b>	Services
<b>Type</b>	Input
<b>Equipment</b>	N/A
<b>Development</b>	N/A
<b>Time frame</b>	2000-07-31 to 2010-07-31
<b>Place</b>	Secretariat ITEP
<b>Lead nation</b>	ITEP Secretariat
<b>Partners</b>	All ITEP Participants
<b>Point of contact</b>	ITEP Secretariat, <a href="mailto:secretariat@itep.ws">secretariat@itep.ws</a>
<b>Web site</b>	<a href="http://www.itep.ws/">http://www.itep.ws/</a>
<b>Status</b>	Ongoing
<b>Comments</b>	

<b>Project Nr 7.1.4</b>	
<b>Title</b>	Lessons learned from test and evaluation.
<b>Description</b>	ITEP Participants and the ITEP Secretariat will review on a regular basis, past, and ongoing test and evaluation and their associated procedures to draw lessons learned and improve future ITEP test and evaluation procedures and methodologies.
<b>Aim</b>	Provide better test and evaluation and commonly agreed procedures.
<b>Request</b>	Users, Donors, ITEP Participants.
<b>Category</b>	Services
<b>Type</b>	Input
<b>Equipment</b>	N/A
<b>Development</b>	N/A
<b>Time frame</b>	2000-07-31 to 2010-07-31
<b>Place</b>	Secretariat ITEP
<b>Lead nation</b>	ITEP Secretariat
<b>Partners</b>	All ITEP Participants

<b>Point of contact</b>	ITEP Secretariat, <a href="mailto:secretariat@itep.ws">secretariat@itep.ws</a>
<b>Web site</b>	<a href="http://maic.jmu.edu/iteplessons/">http://maic.jmu.edu/iteplessons/</a>
<b>Status</b>	Ongoing
<b>Comments</b>	The term <b>lessons learned</b> has been replaced by <b>experiences</b> . The Database of International Experiences in support of the Test and Evaluation Community (DIETEC) has been developed by the ITEP Secretariat in collaboration with the James Madison University Mine Action Information Center ( <a href="#">MAIC</a> ) and is currently available at the above mentioned website.
<b>Results/conclusions</b>	

<b>Project Nr 7.2.1</b>	
<b>Title</b>	Follow up on requests for advice on test and evaluation procedures
<b>Description</b>	Follow up on requests for advice on test and evaluation procedures
<b>Aim</b>	Provide advisory service
<b>Request</b>	NMAAs, NGOs
<b>Category</b>	Services – Capacity Building
<b>Type</b>	Output
<b>Equipment</b>	N/A
<b>Development</b>	N/A
<b>Time frame</b>	2003-01-01 to 2007-12-31
<b>Place</b>	Various
<b>Lead nation</b>	TBD
<b>Partners</b>	TBD
<b>Point of contact</b>	See comments
<b>Web site</b>	<a href="http://www.itep.ws">www.itep.ws</a>
<b>Status</b>	Standby
<b>Comments</b>	

<b>Project Nr 7.2.2</b>	
<b>Title</b>	Maintenance and upgrade of the ITEP website.
<b>Description</b>	Maintenance and upgrade of the ITEP website.
<b>Aim</b>	To keep the webpage up to date with relevant information.
<b>Request</b>	ITEP Executive Committee.
<b>Category</b>	Services
<b>Type</b>	Output



**International Test and Evaluation Program  
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<b>Equipment</b>	N/A
<b>Development</b>	N/A
<b>Time frame</b>	2000-07-31 to 2010-12-31
<b>Place</b>	Secretariat ITEP
<b>Lead nation</b>	ITEP Secretariat
<b>Partners</b>	All ITEP Participants.
<b>Point of contact</b>	ITEP Secretariat, <a href="mailto:secretariat@itep.ws">secretariat@itep.ws</a>
<b>Web site</b>	<a href="http://www.itep.ws/">http://www.itep.ws/</a>
<b>Status</b>	Ongoing
<b>Comments</b>	

<b>Project Nr 7.2.3</b>	
<b>Title</b>	Humanitarian Demining Research and Development technologies information materials and website.
<b>Description</b>	Develop demining technologies information materials for dissemination to the international demining community. Additionally, a DoD Humanitarian Demining Research and Development program video will be developed to highlight equipment deemed suitable for usage in landmine detection, clearing vegetation and personal protection for deminers. Provide internet access to reports generated from testing of humanitarian demining systems via the Humanitarian Demining Program Website. Focus on improving the site to enhance sharing of demining research and development technology information. Undertake re-design of the site to accommodate queries from the demining community regarding where, to whom, and how to submit ideas, proposals, white papers, etc. pertaining to humanitarian demining technology.
<b>Aim</b>	Develop demining technologies information materials for dissemination to the international demining community. Outcome - United States Department of Defense Humanitarian Demining Research and Development Catalogue, Video and Website.
<b>Request</b>	Users, Donors, NGOs, NMAAs, Manufacturers, Developers.
<b>Category</b>	Services
<b>Type</b>	Output
<b>Equipment</b>	N/A
<b>Development</b>	N/A
<b>Time frame</b>	1996-01-01 to 2007-12-31
<b>Place</b>	United States, CECOM-RDEC, NVESD.
<b>Lead nation</b>	United States
<b>Partners</b>	
<b>Point of contact</b>	Lee Offen, <a href="mailto:lee.offen@nvl.army.mil">lee.offen@nvl.army.mil</a>
<b>Web site</b>	<a href="http://www.humanitarian-demining.org/">http://www.humanitarian-demining.org/</a>



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for Humanitarian Demining**

<b>Status</b>	Ongoing
<b>Comments</b>	All information is available on the above-listed website.

<b>Project Nr 7.2.5</b>	
<b>Title</b>	Support to the Geneva International Centre for Humanitarian Demining (GICHD) detection and mechanical equipment catalogues.
<b>Description</b>	The Geneva International Centre for Humanitarian Demining will release regular updates of the catalogues on mechanical demining equipment and detection equipment respectively. ITEP will provide data from available test and evaluation and the ITEP Secretariat will provide assistance where needed.
<b>Aim</b>	Deliver test and evaluation results to the Geneva International Centre for Humanitarian Demining (GICHD) as input to the catalogues on mechanical demining and detection equipment respectively.
<b>Request</b>	ITEP Executive Committee, <a href="#">Geneva International Centre for Humanitarian Demining (GICHD)</a>
<b>Category</b>	Services
<b>Type</b>	Output
<b>Equipment</b>	N/A
<b>Development</b>	N/A
<b>Time frame</b>	2002-01-01 to 2010-07-31
<b>Place</b>	Secretariat ITEP
<b>Lead nation</b>	ITEP Secretariat
<b>Partners</b>	All ITEP Participants
<b>Point of contact</b>	ITEP Secretariat, <a href="mailto:secretariat@itep.ws">secretariat@itep.ws</a>
<b>Web site</b>	
<b>Status</b>	Ongoing
<b>Comments</b>	<ul style="list-style-type: none"> <li>• References to test reports available on the ITEP website are included in the following GICHD documents:               <ul style="list-style-type: none"> <li>- <a href="#">Metal Detectors and PPE Catalogue 2007</a>,</li> <li>- <a href="#">Mechanical Demining Equipment Catalogue 2008</a>,</li> <li>- <a href="#">Guidebook on Detection Technologies and Systems for Humanitarian Demining (March 2006)</a></li> </ul> </li> <li>• The Metal Detectors and PPE Catalogue 2007 also includes an <a href="#">overview and summary of results of the STEMMD trial (ITEP Project 2.1.2.3)</a> as annex 1.</li> </ul>

### 3 ANNEX: ITEP PROJECT DESCRIPTION TEMPLATE

Title	Describes the activity as short and as explicit as possible.
Description	Provides a short but clear description of the activity, including what will be done and how.
Aim	Explains why this activity is done
Request	Lists who requested the work or who is the final customer
Category	Survey, Detection (/subcategory), Mechanical Assistance, Manual Tools, Personal Protection, Neutralization, Services.
Type	Input / Methodology / T&E / Output.
Equipment	Gives the type/brand/model of the equipment to be tested (Non Applicable in case of a non T&E task).
Development	Gives the stage of development of the equipment related to this task: COTS (Commercial Off The Shelf), Prototype/Demonstrator, Research/Development (Non Applicable in case of a non T&E task).
Time frame	Gives the time frame, starting and ending date (specify month & year).
Place	Gives the main locations where the activity will be performed, countries and facilities if already known.
Lead	Lists the ITEP Participant leading and/or responsible for the work
Partners	Lists the ITEP Participant(s) or external organizations actively engaged in the task
Point of contact	Gives the name and email address of the point of contact for this activity.
Status	Gives the status of the activity (planned, ongoing, standby, trials-tests completed, archived, postponed, cancelled)
Website	Gives links related to this activity, if available
Comments	<ul style="list-style-type: none"> <li>- Any useful information is added related to the status of the project, progress reports, and published test reports</li> <li>- In case a project has been postponed or cancelled the reasons are quoted.</li> <li>- In case a project is in the “trials completed” phase, an indication is given of the date when the test report is expected.</li> <li>- Any links and coordination activities with other projects are also documented here.</li> </ul>
Results/Conclusions	<p>In case of archived projects this field includes the following information:</p> <ul style="list-style-type: none"> <li>- test report + link to report on the ITEP Reports webpage or other website,</li> <li>- concise summary of the results taken from the test report when available, and comments on the follow-up of the ITEP activity.</li> </ul>