

# EUDEM Research Survey

## EUDEM2 Questionnaire1 (Industrial Companies/Equipment Manufacturers)

<b>PART I: Relationship with military/humanitarian demining. Problem knowledge.</b>	DATE: 23.07.03
Organisation: Commercial SME for instrumentation with own initiated R&D activities  MIT GmbH Magnetic Imaging Tools, Gostritzer Straße 61-63 Phone: +49-351-4734 8126, FAX: +49-351 4734 8448, homepage: <a href="http://www.mit-dresden.de">www.mit-dresden.de</a>  Contact Person: <a href="mailto:mit@mit.tz-dd.de">Professor Dr. Gerd Lehmann, mit@mit.tz-dd.de</a>	
How would you rate your level of knowledge/understanding in military demining: 2  Level of knowledge/understanding in humanitarian demining: 3  No. of years involved in HD: 3  Details (type of involvement) in HD: <a href="#">development of sophisticated metal detectors</a>	
Main sources of information on humanitarian demining: <input checked="" type="checkbox"/> direct contacts with deminers, (1:little, 5: mostly used) 2 <input checked="" type="checkbox"/> field visits, (1:little, 5: mostly used) 1 <input checked="" type="checkbox"/> literature, (1:little, 5: mostly used), which literature source is used on a frequent basis 3 <input checked="" type="checkbox"/> Titles journals: <a href="#">SPIE Proceedings</a> <input checked="" type="checkbox"/> Internet, (1:little, 5: mostly used), which site is used on a frequent basis 3 <input checked="" type="checkbox"/> Web page(s): <a href="#">EPFL, Bruschini</a>	
Frequency of field visits: 1: none; 2: sporadically (once a year) 3: regularly (several times a year)  Where: indicate geographical zones or countries: _____	Deleted:
Frequency of contacts with deminers: 1: none; 2: sporadically (once a year) 3: regularly (several times a year)  Who (names + contact details): <a href="#">Presentation and lectures at Sprengschule Dresden (School for Blasting and EOD)</a>	Deleted:
Knowledge of demining operations: 2 (ex. SOPs (Standard Operating Procedures))  Details: n.a.	Deleted:
Knowledge of deminers' requirements: 3 (ex. SORs (Statements Of Requests), "wish lists")  Details: n.a.	
Would you like to know more on humanitarian demining (yes/no/yes and already planned): <a href="#">yes (further details not given)</a>  What and at which frequency: <input type="checkbox"/> ad hoc courses, <input checked="" type="checkbox"/> field visits; <input type="checkbox"/> weekly <input checked="" type="checkbox"/> monthly updates	
Knowledge of the UXO problem (UneXploded Ordnance): 5	

<p>UXO problem taken into account in your work: 5  How has it been taken into account? (describe): own R&amp;D for MG and MD sensors including computer aided visualisation, cooperation with German contractors</p>
<p>Activities focused on a specific country or area: <b>Germany</b>  (ex. Cambodia)</p> <p>Equipment developed (list which ones) : sophisticated MD and MG including software</p> <p>Name product/equipment: <b>MIT-EXPLORER</b>  General description: fused sensors (MD, MG) for UXO detection on trolley, sophisticated visualization software, survey and mapping software, pulse-resonance MD with 8 time domain channels, magneto-static MG</p> <p><input type="checkbox"/> GPR  <input checked="" type="checkbox"/> MG (own developed)  <input checked="" type="checkbox"/> MD (own developed)  <input checked="" type="checkbox"/> Combined multi sensor detection systems (details, which sensors): MD, magneto-static gradiometers (MG)  <input type="checkbox"/> mechanical equipment  <input type="checkbox"/> remotely operated detection systems  <input type="checkbox"/> remotely operated area reduction systems  <input type="checkbox"/> chemical systems (e.g. Biosensor)</p> <p>For which application areas:  <input type="checkbox"/> hand held  <input checked="" type="checkbox"/> vehicle based  <input type="checkbox"/> air borne  <input type="checkbox"/>  <input type="checkbox"/></p> <p>Aimed at  <input type="checkbox"/> AP  <input type="checkbox"/> AT  <input checked="" type="checkbox"/> UXO  <input type="checkbox"/></p> <p>Overlaps between equipment developed for other application domains (e.g. medical/geosciences): which ones and how?</p> <p><b>Non-destructive testing in civil engineering:</b>  <b>MIT-SCAN-2, -2F</b> (fast determination of reinforcement bar location and orientation in fresh and hardened concrete with high precision), MIT-SCAN-T for thickness measurement of asphalt and concrete layers/pavements</p> <p><b>Medical:</b>  non-destructive high- precision and radiation-less localization of metallic implants</p>
<p><b>PART II: Knowledge of other (R&amp;D) activities, esp. EC.</b></p>
<p>Knowledge of ongoing EC R&amp;D projects related to humanitarian demining: 3  Which ones: MD, explosive sensing, sensor fusion</p> <p>Knowledge of other R&amp;D projects related to humanitarian demining: 1</p> <p>Details/Which ones: no further details released</p>
<p>Would you like to know more on current research activities  <input checked="" type="checkbox"/> yes  <input type="checkbox"/> no  <input type="checkbox"/> yes and already planned:</p> <p>What and at which frequency:  <input checked="" type="checkbox"/> newsletter,  <input type="checkbox"/> workshop,  <input type="checkbox"/> conference,  <input checked="" type="checkbox"/> e-mail;  <input type="checkbox"/> weekly updates  <input checked="" type="checkbox"/> monthly updates</p> <p>Preference for "push" or "pull" technique: pull  (ex. receiving possibly unsorted e-mail, or looking up oneself and selecting the information)</p>

**PART III: Product/System testing, characteristics and pricing.**

Have you already carried out a "proof of principle" concerning the equipment you propose:  
yes, additional extended tests ongoing  
(yes, ongoing, no)

Details: modelling of size, position and signatures of UXO, 3D-tomography

How has equipment testing already been executed:  
O none;  
X in the lab,  
O under internal controlled conditions,  
X under external controlled conditions,  
X in the field

What kind of tests has been carried out?  
UXO detection under complex conditions (crossing metallic supply means, conducting soils, basaltic surrounding)

Where have these tests been carried out?  
Different approved test fields in Germany

Details: where and how was it tested, which guidelines were followed (ITEP, Others)? Others, German EOD Standards

How is further equipment testing being planned:  
O none;  
O in the lab,  
X under internal controlled conditions,  
X under external controlled conditions,  
X in the field

Details: no further details released

Type of product/system at which you are aiming (if several products, use different forms for each type of product):

MIT-EXPLORER: fused sensors (MD, MG) for UXO detection

MAGNO-GRAPH: software for evaluation of field measurements, determination of position, size and signatures of metallic objects

MAGNO-BOHR: software for complete extraction of information (multi-pole calculation) obtained by bore hole measurements, the object parameters can be obtained with high accuracy with a number of drilling holes reduced by 60 – 80 % in comparison to the state of art

Have you carried out any market studies?

X yes  
O no

Which ones, and is this information available? no further details released

What type(s) of product(s) are you producing + exact name of product (ask brochure)? see above, brochures available, more details on homepage

If you have to summarize what lessons have been learned by you for HD, which you could share with others:  
Development of advanced metal detector systems which deliver object signatures

**PART IV: General Comments:**

Comments on the EUDEM2 initiative in general: the huge number of national and international activities should be co-ordinated to obtain a substantial progress

Questionnaire interview: no comments released

Comments on the concept of an Open, Detailed Web based Database (ex. EUDEM2):  
?

Comments on the way EC projects are financed, suggestions: