

**Final Business Plan for a CEN Workshop on
Humanitarian Mine Action - Test and evaluation - Metal
detectors - Part 2: Soil characterisation for metal detector and
ground penetrating radar performance**

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Introduction

This Business Plan proposes a new activity for CEN Workshop 7, “Humanitarian Mine Action - Test and Evaluation - Metal Detectors”, to reconvene the Workshop to produce a second, and complementary, part of CEN Workshop Agreement 14747:2003, to agree and publish consensus on soil characterisation for metal detector and ground penetrating radar performance.

0 Status of this Business Plan

Approved by the Workshop Kick-Off meeting.

1 Workshop participants

The targeted participants for this new activity within CEN Workshop 7 are:

- United Nations Mine Action Service (UNMAS);
- Geneva International Centre for Humanitarian Demining (GICHD);
- International Test and Evaluation Program for Humanitarian Demining (ITEP);

- Manufacturers: Adams, CyTerra, Ebinger, ERA, Fisher, Foerster, Giat, Guartel, LG Precision, Minelab, Pro-Scan, Reutech, Schiebel, Tohoku University, Vallon, White's, etc.;
- Users
 - NGO: NPA, MgM, MAG and many others
 - Military: national, NATO;

- Institutions/people who perform tests
 - BAM, CROMAC, CROMAC-CTDT, etc.;

- Experts in soils and experts on effects of soil on sensors;
- Experts in standards
 - WG 126
 - CEN member
 - GICHD/UNMAS for IMAS.

2 Background

Following a mandate issued by the European Commission, CEN created a Working Group of the CEN Technical Board, BT/WG 126, to ensure coordination and generate specific standardisation initiatives useful for humanitarian mine action.

Among the CEN Workshops created within this field, CEN Workshop 7 was dedicated to the test and evaluation of metal detectors. It eventually produced CWA 14747:2003, which remains a current CEN publication.

CWA 14747 has been extensively used and tested in many activities performed by ITEP members. The results of these tests are public. The CWA is referenced in the International Mine Action Standard IMAS 3.40.

The experience gathered when using CWA 14747 clearly identified the value of being able to classify soils with regard to their influences on metal detectors. The parameters that determine the effect of soils on metal detectors and ground penetrating radar (GPR) should be identified: these may include magnetic permeability and its variation with frequencies and space, permittivity, and electrical conductivity. Since the same soil may have different effects on different designs of sensors, it may be necessary to classify detectors in terms of their varying ability to manage soil effects. Relevant sensor characteristics may include pulse induction or continuous wave, dynamic or static, shielded or not, type of soil compensation, etc.

Once the key soil parameters (those that influence the sensors or that have the most important influence of sensors) have been identified, the possibility to create categories based on thresholds values of these parameters would be investigated.

Such a soil classification would have several significant advantages:

- users would be able to make a better judgement of the soils encountered during clearance to facilitate the appropriate selection of metal detectors for their specific environmental situation;
- aid test and evaluation of metal detectors through better understanding and quantification of soil effects.

Moreover, in recent years several new dual detectors that combine metal detectors with GPR have been developed. Since GPR performance is affected by soil characteristics in different ways than metal detector performance it would also be useful to be able to classify soils for GPR purposes, in order to help the harmonization of tests of dual sensors and later their selection by future customers.

3 Objectives

For the above reasons it is proposed to reach an agreement on the design of soil characterisation, and on the feasibility of methodologies to classify soils for both metal detectors and GPR.

The aims of the CEN Workshop on characterisation of soils for electromagnetic sensors are therefore:

- to establish the state of the art on the effect of soils on metal detectors, GPR and their combination;
- to create quantitative characterisation of soil properties relevant to metal detector and GPR performance;
- to provide a methodology for measuring the above soil properties;
- to create a classification of soils, usable in controlled conditions to help estimate the degree to which they affect detectors;
- to provide a system easy to apply for users in the field.

The Workshop Agreement is intended to be used by manufacturers and end-users of equipment, and testing authorities.

The document produced by the Workshop is proposed for publication as CWA 14747, part 2. The same distribution and dissemination policy as for part 1 will apply. On approval of the CWA it will be sent by CEN Management Centre to GICHD for presentation to the IMAS Review Board and consideration for inclusion into IMAS.

4 Workshop's Work Programme

The CEN Workshop working language and documentation will be English.

All meetings are proposed to take place at the CEN Management Centre in Brussels.

Following the first meeting, the preparation of a first draft of the CWA will take place. Comments will be made by Workshop participants by electronic means in order to improve the draft.

A second plenary meeting will be organised to agree on the changes to be made to the draft and to make the decision to send it to a public comment process.

The draft CWA will be placed on the CEN web site, for a minimum of 60 days. When the consultation is finished, the secretariat will send to each participant a compilation of the comments made.

A third plenary meeting will take place subsequently to consider all comments and decide on the follow-up. Each person/company who has sent comments shall receive a comments resolution report showing how their proposals have been dealt with.

If the comments are not important and mostly editorial, the Chairman can decide to seek consensus on the document electronically, with the view of publishing it assuming participants reach consensus. "Consensus" means no major opposition as opposed to unanimity.

If the comments are of a more detailed or difficult nature, it could be decided to organise a final meeting in order to meet consensus on a final draft.

Table 1 Proposed schedule

Meeting	Goal	Date
Kick-off meeting	Adoption of Business plan, appointment of Secretariat and Chair, etc., repartition of work among participants	15 November 2006
2nd plenary meeting	Examination of the draft	3 May 2007
	Sending of the draft to public enquiry	May 2007
3 rd plenary meeting	Resolving of comments	September 2007
	Publication of CWA and closure of Workshop	November 2007

Once the consensus is reached, the approved CWA will be sent to the CEN Management Centre (CMC) for publication.

On completion of the work programme as described in the Workshop Business Plan, the CMC, in co-operation with Chair and Secretariat, will consider the Business Plan to be fulfilled.

5 Workshop Organization

The CEN Workshop will be supported by a Chairman's Advisory Group, a Secretariat and a Chair.

The Chairman's Advisory Group, representative of the main areas of expertise in the field and appointed by the Workshop, will invite prospective participants, and determine how the Workshop meetings will proceed. It is planned that most of the work of the Chairman's Advisory Group will be achieved by e-mail correspondence.

The Secretariat is AFNOR, the French CEN Member.

Chairmanship: Dr Yann Yvinec (RMA) is the Chair with the help of Prof. Marc Acheroy (RMA).

Working Groups, whose composition and scope will be decided by the Workshop Plenary, will prepare proposals for inclusion in the draft CWA. The role of the Working Groups is to prepare proposals on specific topics to serve

as a basis for a formal decision at the Workshop level during a plenary meeting.

6 Resources

The financial resources to support the Workshop are provided by the European Commission (DG AIDCO) and EFTA under contractual arrangement with CEN.

7 Related activities

Close liaisons will be maintained with GICHD, ITEP, UNMAS, and CEN/BT WG 126.

8 Contact points

<p><u>Chair of the CEN Workshop</u></p> <p>Dr Yann Yvinec</p> <p>Royal Military Academy 30, avenue de la renaissance B-1000 Brussels - Belgium</p> <p>Tel: +32 (0)2 742 64 74 Fax: +32 (0)2 742 64 72</p> <p>e-mail: yann.yvinec@rma.ac.be</p> <p>marc.acheroy@rma.ac.be</p>	<p><u>Secretariat to the CEN Workshop</u></p> <p>Ms Sylvie Arbouy</p> <p>Association Française de Normalisation (AFNOR) 11, avenue Francis de Pressensé FR-93571 Saint-Denis La Plaine Cedex</p> <p>Tel: + 33 1 41 62 80 00 Fax: + 33 1 49 17 90 00</p> <p>e-mail: sylvie.arbouy@afnor.org</p>	<p><u>CEN Programme Manager</u></p> <p>Ms Gaïd le Gall</p> <p>CEN Management Centre 36 Rue de Stassart B – 1050 Brussels - Belgium</p> <p>Tel: + 32 (0)2 550 09 39 Fax: + 32 (0)2 550 08 19</p> <p>e-mail: gaid.legall@cenorm.be</p>
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