

EFNDT WG5 - PSSndtT

Working Group 5 - Public Security and Safety NDT Technology

Official web page

General Information

EFNDT WG5 – APMD

Established in March 1999 as a Working Group for Antipersonnel Mines Detection.

EFNDT WG5 - PSSndtT

Broadened scope and the new name at General Assembly of EFNDT held in Vienna on Nov.12. 2005.:
Working Group for
Public Security and Safety Nondestructive testing Technology.

The convenor:

Prof. Dr. Vjera Krstelj,
vjera.krstelj@fsb.hr
University of Zagreb,
Faculty of Mechanical engineering and Naval architecture,

The deputy of convenor:

Dr. Kurt Osterloh,
kurt.osterloh@bam.de
BAM, Fed. Inst. for Materials Research and Testing,

The hosting society:

[Croatian Society for Non-destructive Testing](#)

65 [members](#)

in process of updating
from 21 countries;

[eleven meetings](#) held,

 News and forthcoming events

- [Preliminary programme](#) of the [12th WG5 meeting](#) is available. The meeting is open to all members and other interested scientists and experts.

 WG5 Open Forum

- With regrets we have to inform you that open forum no longer works due arrival of large number of spam.

 Topics about WG 5 - PSSndtT:

- WG5 - PSSndtT [Program](#)
- [Membership list](#) (status on January 19th, 2005.)
- [Membership Form](#)

- [1st Meeting](#), and the [Minutes](#) of the 1st Meeting
- [2nd Meeting](#), and the [Minutes](#) of the 2nd Meeting
- [3rd Meeting](#), and the [Minutes](#) of the 3rd Meeting
- [4th Meeting](#), and the [Minutes](#) of the 4th Meeting
- [5th Meeting](#), and the [Minutes](#) of the 5th Meeting
- [6th Meeting](#), and the [Minutes](#) of the 6th Meeting
- [7th Meeting](#), and the Minutes of the 7th Meeting in [html](#) and [pdf](#) version
- [8th Meeting](#), and the [Minutes](#) of the 8th Meeting
- Ad hoc Meeting (Montreal), and the [Minutes](#) of the Ad hoc Meeting
- [9th Meeting](#), and the [Minutes](#) of the 9th Meeting
- [10th Meeting](#) and the [Minutes](#) of the 10th Meeting
- [11th WG5 Meeting and Workshop](#) and the [Minutes](#) of the 11th Meeting
- [12th WG5 Meeting](#)

- Useful [Links](#)

This web site is official web site of EFNDT WG5 - PSSndtT.

Last updated: May 10th, 2007.

Send questions, comments and suggestions to: marina.gotal-luksa@fsb.hr

The EFNDT WG5 - PSSndtT list of members, valid at March 23rd, 2005., is as follows.

#	Name	Country	Company/Organisation
1	Dieter Schrottmayer	Austria	Schiebel Austria
2	Petr P. Prokhorenko	Belarus	Belarus Association NDT
3	Dean Vucinic	Belgium	Vrije Universitet Brussel
4	Nurija Memic	Bosnia and Herzegovina	OKTOL
5	Boba Stevković	Bosnia and Herzegovina	Mine Action Center of Serbska Republic
6	Ivan Hrvoic	Canada	GEM Systems Inc.
7	Gerry Koczerzuk	Canada	MBW
8	Davor Antonic	Croatia	Faculty of Electrical engineering University of Osijek
9	Tomislav Ban	Croatia	HCR
10	N. Gambiroža	Croatia	HCR
11	Damir Gorseta	Croatia	Demining company
12	Mirko Ivanušić	Croatia	HCR
13	Neven Karas	Croatia	HCR
14	Vjera Krstelj	Croatia	Faculty of Mech. Eng. and Nav. Arch., University of Zagreb
15	Damir Lukic	Croatia	L.M.B.S.
16	Ana Lypolt	Croatia	Croatian Society for NDT
17	Slavko Majetić	Croatia	DOK-ING
18	Damir Markucic	Croatia	Faculty of Mech. Eng. and Nav. Arch., University of Zagreb
19	Dario Matika	Croatia	Ministry of Defence
20	Dinko Mikulić	Croatia	Ministry of Defence
21	Miroslav Omelic	Croatia	Faculty of Mech. Eng. and Nav. Arch., University of Zagreb
22	Nikola Pavkovic	Croatia	HCR
23	Josip Stepanic	Croatia	Faculty of Mech. Eng. and Nav. Arch., University of Zagreb
24	Ivan Steker	Croatia	Croatian Mine Action Centre
25	Muhamed Suceska	Croatia	Brodarski Institute

26	<i>Srecko Svaic</i>	<i>Croatia</i>	<i>Faculty of Mech. Eng. and Nav. Arch., University of Zagreb</i>
27	<i>Zdravko Terze</i>	<i>Croatia</i>	<i>Faculty of Mech. Eng. and Nav. Arch., University of Zagreb</i>
28	<i>Josip Tuličić</i>	<i>Croatia</i>	<i>DOK-ING</i>
29	<i>Jiri Chladek</i>	<i>Czech Republik</i>	<i>Demining company</i>
30	<i>Frantisek Peterka</i>	<i>Czech Republik</i>	<i>Nuclear Research Institute</i>
31	<i>Philippe Rizo</i>	<i>France</i>	<i>CEA</i>
32	<i>Joerg Beckmann</i>	<i>Germany</i>	<i>BAM</i>
33	<i>Christian Bohling</i>	<i>Germany</i>	<i>Technische Universität Clausthal</i>
34	<i>Gerd Dobmann</i>	<i>Germany</i>	<i>Fraunhofer IZFP</i>
35	<i>Uwe Evert</i>	<i>Germany</i>	<i>BAM - Berlin</i>
36	<i>Mate Gaal</i>	<i>Germany</i>	<i>BAM - Berlin</i>
37	<i>Rainer Link</i>	<i>Germany</i>	<i>DGZfP</i>
38	<i>Christine Mueller</i>	<i>Germany</i>	<i>BAM - Berlin</i>
39	<i>Kurt Osterloh</i>	<i>Germany</i>	<i>BAM - Berlin</i>
40	<i>Wolfgang Schade</i>	<i>Germany</i>	<i>Technische Universität Clausthal</i>
41	<i>Ferenc Fucsok</i>	<i>Hungary</i>	<i>Scientific Society of Mech. Eng Org. of NDT</i>
42	<i>Amos Notea</i>	<i>Israel</i>	<i>Technion</i>
43	<i>Fredy H. Ornath</i>	<i>Israel</i>	<i>Materials System Ltd.</i>
44	<i>Gavriel Shoef</i>	<i>Israel</i>	<i>Gabi Shoef LTD</i>
45	<i>Shaban Buza</i>	<i>Kosovo</i>	<i>University of Pristina, Mechanical Engineering Faculty</i>
46	<i>Ismajl Gojani</i>	<i>Kosovo</i>	<i>University of Pristina, Mechanical Engineering Faculty</i>
47	<i>Arbnor Pajaziti</i>	<i>Kosovo</i>	<i>University of Pristina, Mechanical Engineering Faculty</i>
48	<i>Andrej Bastar</i>	<i>Malaysia</i>	<i>Malaysia NDT</i>
49	<i>Piotr Pregowski</i>	<i>Poland</i>	<i>PIRS - Pregowski InfraRed Services</i>
50	<i>Vladimir Klyuev</i>	<i>Russia</i>	<i>RSNTTD Russia</i>
51	<i>Alexey Kovalev</i>	<i>Russia</i>	<i>RSNTTD Russia</i>
52	<i>Irena Pushkina</i>	<i>Russia</i>	<i>RSNTTD Russia</i>
53	<i>Tomaz Apih</i>	<i>Slovenia</i>	<i>Institute "Jozef Stefan"</i>
54	<i>Janez Grum</i>	<i>Slovenia</i>	<i>Fakultet stojarstva Ljubljana</i>
55	<i>Dean Korosak</i>	<i>Slovenia</i>	<i>University of Maribor</i>

56	Marko Maučec	Slovenia	Nuclear Geophysics Division Kernfysisch Versneller Instituut, Rijksuniversiteit Groningen
57	Joze Rant	Slovenia	Institute "Jozef Stefan"
58	Bostjan Zalar	Slovenia	Institute "Jozef Stefan"
59	Anders Flogwall	Sweden	CelsiusTech Electronics AB
60	Jan Ole Robertz	Sweden	
61	Mohamed Ferid Herelli	Tunis	Sureté Ferroviaire et Formation
62	Igor J. Shevchenko	Ukraine	UK SNDT
63	Vladimir A. Troitckiy	Ukraine	UK SNDT
64	Thomas Bloodworth	UK	
65	Nenad Gucunski	USA	Rutgers University

The list of colleagues that should be informed is as follows:

#	Name	Country	Company/Organisation
1	Gerhard Aucfricht	Austria	EFNDT BOD Vice - president
2	Isaac Einav	Austria	IAEA
3	Ulf Rosengard	Austria	IAEA
4	Gerhard Hennaut	Belgium	EFNDT BOD
5	Melanija Grubic - Sutara	Croatia	State Institution for Normisation and Measurements
6	Ivan Toth	Croatia	Polytechnic college Velika Gorica
7	Michel Poudrai	France	EFNDT BOD
8	Jörg Völker	Germany	DGZfP President
9	Erik Zeelenberg	Holland	EFNDT BOD
10	Sergio Gia	Italy	Italian NDT Society
11	Avi Beqiri	Kosovo	Institute "INKOS"
12	Jan Mottl	Poland	Polish NDT Society
13	Rodolfo Rodríguez	Spain	
14	Emilio Romero	Spain	AEND
15	Claes Eriksson	Sweden	EFNDT BOD
16	Kristiansen Rune	Sweden	
17	Steve Brown	UK	

18	<i>John Crawford</i>	<i>UK</i>	
19	<i>Mike Farley</i>	<i>UK</i>	<i>EFNDT BOD President</i>
20	<i>John Thompson</i>	<i>UK</i>	
21	<i>Matt Gallagher</i>	<i>UK</i>	<i>BINDT</i>

In the tables, members are grouped in the countries, which are listed in alphabetical order.

The application form for the membership in EFNDT WG5 - PSSndtT could be found [here](#).

12TH MEETING- Invitation
Draft Agenda

Dear members of WG5,

I hereby have the pleasure to invite you to the 12th meeting of EFNDT WG5 – PSSndtT (Public Security and Safety NDT Technology) that will be held on May,25, 2007. in Opatija at Hotel Adriatic, starting time 10 am.

1. Opening of meeting,
2. Roll call of participants,
3. Adoption of the Agenda,
4. Accepting the Minutes of the 11th WG5 Meeting,
5. Information from the Convenor, achievements and foresight activities
6. Information about activities, members presentations,

7. WG5 initiatives on co-ordination and structuring NDT research system and policies for the competitiveness of European Public security and safety industry (NDT field), focused on early and reliable detection and identification from threats;

Objectives:

- Analysis of current demands
 - Approach; possibly suitable NDT technologies, latest development
 - Identify co-operation partners in public authorities and industry
 - Establishing a suitable framework for cooperation
 - Upcoming European and national (or bilateral) programs and funds
 - Participation in networks
8. Date and place for the 13th WG5 – PSSndtT meeting,
 9. Any other business.

Estimated Meeting duration is from 10 am to 5 pm including brakes (coffee&brunch as refreshments)

Convenor of WG5 – PSSndtT

Prof.dr.Vjera Krstelj

All comments and updated membership application please send by e-mail with the information of your participation at the 12 WG5 meeting.

More about the meeting: <http://www.fsb.hr/ndt/wg5>

[Back to WG5 homepage](#)

The Twelfth Meeting of EFNDT WG5 – PSSndtT 

Working Group 5 - for Public Security and Safety NDT Technology

Hotel Adriatic
Opatija, Croatia,
May, 25, 2007.

Organizer of the meeting and workshop

The organizer of the meeting is Croatian Society for Non-Destructive Testing - [CrSNDT](#).

Place and time of the meeting

The twelfth meeting of the WG5 - PSSndtT members and other persons interested in its work is planned to be held in Hotel Adriatic, Opatija, Croatia, May, 25, 2007., at 10:00 am.

The agenda of the Meeting is [here](#).

Last updated: May 11th, 2007.

Send questions, comments and suggestions to: marina.gotal-luksa@fsb.hr

EFNDT WG5 - APMD

Working Group for Antipersonnel Mine Detection**Program of work**

 Motivation for the WG5 - APMD

We, people from science, are aware of two mutually conflicting tendencies involving science. On one side, science for the twenty-first Century should be at the service of humanity as a whole and should contribute in providing a better quality of life for everyone and a healthy and productive environment for present and future generations. On the other side, scientific and technological progress has also enabled the construction of sophisticated weapons, including antipersonnel landmines (APL), having the potential to destroy life. The United Nations has proclaimed the Year 2000 as the International Year for Culture of Peace as a step towards a lasting peace between and within countries. While appreciating a strong commitment of political organisations as well as individuals to the well-being of the humankind, and recognising that their efforts will continue to play a key role for long-term goals for improvement of human race wellbeing, we also understand that such efforts are not enough when one is concerned with problem associated with threat of mines that are already present in various areas. For the real-time life-support and the survival of all form of life in the place where 80 millions of APL, has been left, in more than 60 countries around the world, the only future is intrinsically linked to the technology.

Beside its influence on human beings, mines also make large portions of land economically inaccessible. The affects on soil due to its long-standing exposure to explosives - mines content, has not been understood yet enough.

Enhancing the role of NDT methods as a part of Quality Assurance, as well as a main field contributing to the development of the methods which could be crucial for APL detection, and recognising that NDT is a powerful resource of methods for APL detection with promises to be even greater in the future, we in NDT could contribute to the quality of life. Because of the aforementioned facts about APL, we are highly motivated to put effort into R&D, new technological solutions and faster, reliable and efficient humanitarian detection of mines. In this case, probably more than anywhere else, the very nondestructivness of NDT is required.

We share a scientific tradition where progress is achieved through various types of co-operations, such as international WGs and interdisciplinary collaboration through national and international research facilities. Taking into account the responsibility to act co-operatively, through our individual spheres of responsibility in the scientific field we are dealing with and the scientific ethical standards, we would like to contribute and share our experience with all those who are interested in that particular implementation of NDT. Reliable detection influences mostly the cost of demining operation, but it could also shorten the time of demining.

The main goal of WG5-APMD is R&D in detection, that is localisation and identification of APL. APL detection equipment used today does not enable efficient and reliable detection with a 99,6% probability of detection requested by standards. Various NDT methods seem like prospective candidates, so that during last several years a large volume of laboratory and trial testing results was obtained. These serve as a basis for a faster progress and promise adequate WG5-APMD results through a some kind of synergetic effect.

Because of a large number of relevant parameters in APMD, it is highly desirable to organise the capability demonstration. The experience gathered from past procedures, e.g. PISC series, is such that there is often a large gap between the anticipated performance and results achieved in practice. Results obtained from tests with realistic test-pieces are more reliable. We do have numerous kinds of test-pieces and test-fields which can serve this purpose.

Preliminary Version of the Statut of WG5-APMD

WG5-APMD Membership

- Participation in the WG5-APMD is open to all Full and Associate Member NDT Societies of the EFNDT and their associated/nominated persons or groups (in following text: interested parties) situated in Europe and involved in research and development of antipersonnel landmine detection.
- In cases where an organisation/equipment producer wishes to contribute to the WG5-APMD, it may petition the convenor or the Board of Directors for Associate membership. This is valid for all interested parties world-wide.
- Membership of WG5-APMD is established by the Board of Directors.
- Full Members of WG5-APMD have all rights to work in accordance with WG5-APMD objectives. Every full memeber have the right on one vote.
- Associate Members of WG5-APMD have all rights to work in accordance with WG5-APMD objectives, but they have no right to vote.
- To become a member of the WG5-APMD, an interested party should send a proposal for participation to the convenor or the Board of Directors.
- The President of EFNDT is an ex-officio member of the WG5-APMD.
- Membership in the WG-APLD is free and has no time limit, unless a member requests the cancellation of membership in the WG5-APMD.
- All members should follow the Statute of the WG5-APMD and other documents approved by the EFNDT Board of Directors.

WG5-APMD Structure

- The EFNDT Board of Directors appoints the WG5-APMD Convenor.
- To maximise work efficiency, the WG5-APMD may be organised in sub-groups working on a particular objective from the plan of activities in a current time interval.

- A person responsible for the WG5-APMD work and co-ordination of the sub-groups activities is the Convenor.
- The WG5-APMD sub-group should have a sufficient number of members, not less than four, to work on the programme.

Activities

- The main activities of the WG5-APMD are:
- organisation and conduct of research and development of APMD equipment,
- organisation of efficient collaboration among the people in the demining community,
- plan of activities for a specific time interval forms Convenor in agreement with members, following Board of Directors directions,
- any WG5-APMD member suggests for working activities.

Methods of Working

- All discussions and reports are confidential, by agreement of all members and their representatives.
- A report of activities planned and done during a specific time interval is, after its approval by the Board of Directors, presented afterwards. The report will be available to all WG5-APMD members.
- The special report on WG5-APMD activities and results is prepared for each Board of Directors meeting.
- A meeting shall be announced at least four weeks in advance through circulation of a Notice of Meeting and Agenda.
- Voting will be by a simple majority of votes.
- The quorum for a vote shall be a minimum of one third of Full Members and the President of EFNDT or the Convenor of the WG5-APMD. Decisions obtained without the quorum are of advisory nature, until ratified at a subsequent meeting or by a postal ballot.

History of the WG5-APMD

The Working Group for Antipersonnel Landmines Detection, WG5-APMD, was founded at the Meeting of EFNDT Board of Directors in Berlin, March 1999 following the proposal of the Prof. Vjera Krstelj, as the [fifth Working Group](#) of [EFNDT](#).

The convenor of the group is Prof. Vjera Krstelj.

Objectives of the WG5-APMD

- To analyse the present situation of existing NDT methods and to look for suitable physical

principles not yet used

- To establish research and development programs
 - To measure reliability of detection and to establish a ranking list
 - To establish a database of experts and activities in Europe
 - To open special funds of [United Nations](#), [European Community](#), [World Bank](#) or [International Committee of the Red Cross](#)
 - To organise exchange of experience and special conferences
 - To establish an education and training system
 - To support to UN proclamation of the year 2000 as international year for peace by EFNDT activities
-

Last updated: September 24, 2002

Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr

The First Meeting of EFNDT WG5

Working Group for Antipersonnel Landmine Detection

(WG5-APMD)

Organizer and the agenda of the meeting

The organizer of the meeting is Croatian Society for Non-Destructive Testing - [CrSNDT](#).

[Agenda](#) (download Agenda in [pdf format](#), 7k).

Time and lasting of the meeting

The first meeting of the WG-APLD members and other persons interested in its work is planned to be held on the November 22nd 1999, from 10:00 till 17:00.

Place of the meeting

The meeting will be held in [Zagreb](#), the capital of [Croatia](#).

Location

The precise location is the Conference hall at the 3rd floor of the *CTT* - [Center of Technology Transfer](#), Ivana Lucica 5, Zagreb.

The *CTT* is a part of the [Faculty of Mechanical Engineering and Naval Architecture](#), [University of Zagreb](#).

The map of the *CTT* close surrounding is shown [here](#). You may want to view the [plan of Zagreb](#).

Language

The official language of the Meeting is english language.

Detailed meeting program

Detailed meeting program will be presented not later than at the beginning of November.

Meeting fee and application deadline

In accordance with WG5-APMD objectives, the meeting is free with no application deadline. However, because of the more effective organization we ask you to send us your [application form](#), which is at the same time the WG5-APMD questionnaire/membership form.

Registration and written materials

The registration will take place at the 22 November near the Conference Hall of the Meeting. Written materials will consist of the conclusions of the meeting and will be disseminated afterwards.

Transport

- By airplane you come to [Zagreb airport](#). It is connected with a number of other European cities with a daily lines. It is situated about 15 km from the Zagreb center, with which is connected by a bus line.
- By [train](#) you come to Zagreb railway-station situated in the very center of Zagreb. From there you can come after several minutes of walking to [hotels](#) listed.
- By car you can come to Zagreb easily using highways. For detail please consult the appropriate road-map or write to us.

Accomodation

Many of Zagreb hotels are on distances less than 15' by walk from the [Center of Technology Transfer](#) where the meeting will take place. Normally, at the time of meeting there are enough free rooms in them. For some hotels here is the [excerption](#) of their services.

Currency

The approximately exchange ratio for the Croatian Kuna is

1 DEM approx. equals 3,9 Kn

Last updated: 27. October 1999.

Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr

Minutes of the First EFNDT WG5 - APLD Meeting

 **Place and date: Zagreb, November 22nd 1999**

 Agenda:

- Establishing WG-APLD,
 - Setting the necessary structure in accordance with EFNDT Regulations for WGs,
 - Analysis and evaluation of WG potentials,
 - Analysis of the representation of NDT methods in APL detection,
 - Animation of NDT experts for application of their knowledge and experience in mine detection,
 - Classification of the methods and techniques on the basis of their efficiency and applicability,
 - Detection and remediation technologies for APL and APL-like targets,
 - Reliability analysis of results in terms of probabilities of detection, false alarm rates, repeatability and reproducibility,
 - Performance demonstration,
 - Standardisation of procedures,
 - Education, qualification and certification for mine detection and corresponding activities,
 - Planning future activities,
 - Establishing Links to Non-European Experts and Societies,
-

 Discussion:

- Welcome by prof. Vjera Krstelj, convenor of WG5 APLD on behalf of [EFNDT](#), [CrSNDT](#), [Faculty of Mechanical Engineering and Naval Architecture](#) and [Center of Technology Transfer](#).

She thanked to participants for attending this meeting and trying to help people affected by mines.

Prof. Krstelj informed the group that WG 5 was initiated by EFNDT in March 1999 in Berlin. She also spoke about the problem of antipersonnel landmines detection in the world and the needs of science contribution and particularly the contribution of NDT experts in providing advance and progress in methods, equipment, standards and procedures. (Some copies of the transparencies are included on request of the members).

Prof. Krstelj presented the structure of EFNDT and underlined that WG5 APLD could co-operate with other, related EFNDT working groups.

- Welcome by mr. Zoran Leitner, Ph.D. deputy director of Center of Technology Transfer.

Mr. Leitner explained the roll of CTT as incubation centre of ideas and host of the 1st meeting of WG5.

- Mr. Miro Džapo presented CTT's project "Performance demonstration of companies for demining in 2000". Project includes procedures for performance demonstration of companies, personnel, protective equipment, metal detectors, dogs and machines.
- Mr. Damir Markuèiè, Ph.D. introduced group for metal detectors, and presented [NDT Laboratory](#) of Faculty of Mechanical Engineering activities related to the methods of APLD.
- Mr. Josip Stepaniæ, M.Sc. presented activities for EFNDT WG5 - APLD announcement. Call for EFNDT WG5 - APLD participation was send to all European NDT societies. Respond was received by Hungarian Organisation for Non-Destructive Testing (HONDT), [Deutsche Gesellschaft für Zerstörungsfreie Prüfung](#) (DGZfP), The Israeli National Society of Non Destructive Testing, Slovenian Society for Non Destructive Testing, The Russian Society for Non-Destructive Testing and Technical Diagnostics (RSNTTD).
Calls for EFNDT WG5 - APLD participation was also send to individual addresses of experts with whom CrSNDT has had prior contacts. EFNDT WG5 - APLD is not known jet and there should be open possibility for cooperation with other groups or companies.
Future activities shall be the establishing database of members and interested persons, and continuous informing of EFNDT WG5 - APLD.
- After discussion about proposed Statute the following changes were proposed:
 - Adding a new kind of membership (observer) in Statute.
 - After long discussion it was decided that all members should be members of national societies, and associated members should pay some amount for membership, or should contribute on some other way.
 - It was decided that article 1.6. should come before article 1.3.
 - Article 1.3. should be as follows: Working group will suggest kind of membership to Board of Directors.
 - Article 4.1. was supplemented and should be: All discussions, conclusions and reports of discussions are confidential, by agreement of all members and their representatives.
 - Statute should be supplemented with article 4.7. 4.7. Observer could attend only if WG agree regarding agenda of meeting.
 - Deadline for membership application is December 31st 1999.
 - The EFNDT WG5 - APLD accepted statute in proposed form with additional changes.
- Applicants for membership were discussed for every member after personal introduction or introduction by questionnaire.
- Presentation of some members The members of APLD WG5 listed bellow used the opportunity to present the activities of there Institutes/firms and their vision of the future activity in WG5. There were 5 speakers;
 - Mr. Dieter Schrottmayer, Ph.D. form Schiebel, Austria presented his firm and firm's products.
 - · Mr. Andres Flogvall, Ph.D. from Celsius Tech Electronics AB, Sweden talked about P.I.C.E. (PinPoint, Identification, Clearance and Ensurance) programme.

- Mr. Jörg Beckmann, Ph.D. from BAM, Germany presented Radiographic Inspection of IED's.
 - Mr. Davor Antoniač, M.Sc., Ministry of Interior Republic of Croatia.
 - Mr. Milan Bajič, Ph.D., Scientific Council of the Croatian Mine Action Center.
 - Prof. Krstelj proposed following priorities for the programme of EFNDT WG5 - APLD:
 - Terminology
 - Standardisation
 - State of art APLD
 - Technology policy
 - RR test
-

After successful and long discussion the following was decided:

- Inside of WG 5 subgroups working on agreed tasks will be formed.
 - Subgroup for terminology should define all relevant terms as priority.
 - Subgroup for standardisation should make contacts and links to ISO, CEN, and EA. For the beginning subgroup for standardisation should concentrate on standardisation of metal detectors. It is underlined that experiences from NDT could be helpful and should be used.
 - Subgroups for other tasks should be formed in near future. Some new members of EFNDT WG5 - APLD could be invited/accepted relating to the problem.
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Prof. Krstelj also expresses the importance for the members of EFNDT WG5 - APLD to participate at the [15th World Conference on NDT](#) in Rome 2000.

She will try to contact ICNDT organisers and explained why all papers regarding APLD should be presented in the session APLD that should be included in the Conference program as additional session.

She will also try to motivate NDP experts to prepare the materials for the World NDT Conference Rome 2000.

The meeting was finished at 16.30 and the additional friendly contacts at 19.00.

The date and place of the EFNDT WG5 - APMD [2nd meeting](#) and agenda will be announced after reply of the members regarding their interests in participation in agreed priorities.

Last updated: 22. November 2000.

Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr

The Second Meeting of EFNDT WG5

Working Group 5 - for Antipersonnel Landmine Detection

(WG 5 - APLD)

Organizer of the meeting

The organizer of the meeting is Croatian Society for Non-Destructive Testing - [CrSNDT](#).

Place, time and lasting of the meeting

The second meeting of the WG5-APLD members and other persons interested in its work is planned to be held in Rome, during [15th WCNDT](#).

Information about the precise place and time of the meeting will be determined later, and will be given at the Information Desk of the 15th WCNDT.

Language

The official language of the Meeting is english language.

The meeting announcement and agenda

The meeting announcement and agenda are [here](#).

Meeting fee and application deadline

In accordance with WG5-APLD objectives, the meeting is free with no application deadline.

Written materials

Written materials will consist of the conclusions of the meeting and will be disseminated afterwards.

Last updated: 3. October 2000.

Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr

EFNDT Working Group 5 - of Antipersonnel Landmines Detection

Minutes of the 2nd Meeting

Rome, October 17th 2000

Place: Rome, Palazze dei Congressi,

Time: October 17th, 2000, 16:30-19:50

Agenda

- I. Accepting the [Minutes](#) of the 1st EFNDT WG5 - APLD meeting, Doc. No. 5,
- II. Objectives and working strategy of EFNDT WG5 - APLD,
- III. Membership report (membership applications and possible members presentations),
- IV. International Conference on APLD, [MATEST 2001](#) – *NDT in Environment Protection at the beginning of the 21st century*,
- V. Future tasks - teams formation
 - o Proposal for new NDT standardisation working groups,
 - o Preparing the advisory comments to the UN documents regarding the antipersonnel landmines detection,
 - o Initiating co-operation with related organisations as ISO, UN, UNESCO, EC JRC,
- VI. Other topics.

Participants:

Davor Antonic, Uwe Ewert, Ferenc Fücsök, Nenad Gucunski, Vjera Krstelj, Vladimir Klyuev, Ana Lypolt, Damir Markucic, Frantisek Peterka, Andrej Samokrutov, Josip Stepanic, Waldemar Swiderski, Mario Zagar, Hermann Wüstenberg,

Guests of the meeting:

Emilio Romero, President of the Spain NDT Society,
Jesus Serrano, President of the 8th ECNDT Organisation Committee.

Ad I

Prof. Vjera Krstelj, convenor of EFNDT WG5 - APLD (in further text WG5), welcomed guests and present members on behalf of EFNDT WG5-APLD. She thanked participants for attending this meeting, trying to find the better way to help people affected by mines. Prof. Krstelj informed the group about the 1st WG5 meeting, held in November 1999. in Zagreb, calling for voting about

minutes of it, what was accepted unanimously.

Prof. Krstelj red the agenda, asking for its approval, and asked members to present themselves.

The meeting was enriched by participation of Mr. Romero and Mr. Serrano, who already highly supported the WG5 activities; namely they informed the group that landmines detection methods should be considered as very important NDT people activity. Thereby the session Landmines Detection is announced for 8th ECNDT, 2002. in Barcelona. The WG5 accepted the information with great pleasure and promised strong activity toward.

Ad II

Prof. Krstelj told present members about the on-going activities. She explained WG5 working principles and its connection to EFNDT, emphasised that WG5 will concentrate its efforts only on humanitarian demining.

About the WG5 future tasks and the organisation of WG5 Prof. Krstelj said that WG5 structure will be determined in accordance with the projects worked at, and emphasised that WG5 should be bigger than it is now, but not too big in order for the members number not to influence destructively WG5 effectiveness. Because the list of members is in the process of forming the extensiveness of group is rather unknown yet, but when it will be finished, it will be distributed to the WG5 members. Then it will be considered whether the mirror groups should be formed on national base because it would be more easily realised the tasks if members from the same country will work intensively together, for what mirror group formation is a natural prerequisite. The mirror group representative is to report about tasks conducted on WG5 meetings, what will not exclude individual membership in WG5. Prof. Krstelj told that WG5 is R&D oriented group so one should know all the other groups doing R&D in mines detection and demining. It is not known how many people work on research of antipersonnel landmines detection, what projects are opened, what patents exist, and similar. She emphasised that standards are missing and those in application are mostly inappropriate, so according to her the tasks are to standardise procedures, terminology and education. Following the efforts made by the WG5 she informed that work on the demining companies' evaluation began. Furthermore she said that teams should be formed in the WG5 to focus on different topics and problems, so the priorities comes out as follows:

- making links with related organisations for possible co-operation,
- preparing the report about the state-of-the-art in antipersonnel landmines detection,
- formation of mirror groups if necessary.
- standardisation,
- certification in APLD by possible reflection of NDT structure of certification, in co-operation with WG 1,

After Prof. V. Krstelj introductory explanation of WG5 objectives and working strategy the extensive discussion shows the high interest of experts in WG5 goals from which the following is extracted:

1. Prof. Wüstenberg said that R&D work, and the experience in organising the work are

prerequisites for WG5 to be recognised, and that is a long-term work. He pointed out the importance of the validation procedure. Prof. Wüstenberg said that more have to be learned about the demining operations from the field experts, and that tasks conducted by WG5 should be more concentrated on R&D than on standardisation of the methods.

Prof. Wüstenberg extracted from the previous discussion the following list of important WG5 tasks:

- collecting information,
 - looking for results in R&D, recommendations and support from national and International related institutions and financing as well, after what WG5 could be used as reference for APLD.
2. Dr. Ewert commented that in a variety of industrial applications there is a considerable knowledge on materials used and other related topics, what does not exist in the case of landmines detection. Dr. Ewert thinks that invitation of specialists for the related areas, like ones for soil structure and dynamics, is needed. He said that some time is needed for the processes mentioned to be performed, like locating the related programs that could possibly exist in other institutions. He proposed as WG5 priority task that the list of organisations for co-operation is made and disseminated among the WG5 members.
 3. Prof. Gucunski paid the attention of a WG5 to the fact that European Geotechnical Society is the example of this kind of organisations. Regarding the standardisation it should be careful not to interfere with the development of methods.
 4. Dr. Markucic hold the opinion that standardisation of the methods is out of the scope in this moment but QA procedures should be applied. The standardisation work should be focused on general APLD topics, terminology and organising the qualification of humanitarian demining companies.
 5. Dr. Swiderski said that about 20 different methods, prospective landmines detection methods, exist and the performance demonstration is of utmost significance.
 6. Dr. Fücsök has given several remarks thinking that WG5 will be successful if one goal is put above the others. Overall, information should be spread, so information exchange is important, and even a small pieces of information exchanged could improve a position considerably. For that purpose, a kind of information exchange centre should be established. In his opinion WG5 could be successful as information providing centre and not as support of a particular method R&D.
 7. Dr. Peterka said that important task in APLD is suspected area reduction principle.
 8. Mr. Antonic informed that in Croatia, the testing of mine field for the performance demonstration will be in service soon.
 9. Prof. Klyuev said that one step toward the information dissemination was made independently through the Journal *Control and Diagnostics* of Russian Society for NDT and Technical Diagnostics which one issue is devoted to landmines and unexploded ordnance detection equipment.
 10. Dr. Samokrutov present the journal named what was highly appreciated and considered with interest.
 11. Prof. Krstelj summarised WG5 priorities as follows:
 - making links with related interested organisations for possible co-operation,
 - preparing the report about the state-of-the-art in antipersonnel landmines detection,
 - R&D (with asking for support),
 - formation of mirror groups if necessary.

- certification in APLD by possible reflection of NDT structure of certification, in co-operation with WG 1,
- work on standardisation in the field of APLD.

Ad III

1. Mr. Stepanic presented the membership report. There are 46 members from 16 European countries, USA and Canada.

Ad IV

1. Prof. Krstelj informed about International Conference on APLD, MATEST 2001 – *NDT in Environment Protection at the beginning of the 21st century*, which will be focussed on the problem of landmines detection. This Conference will be held in Dubrovnik-Cavtat on Sept. 23-24, 2001 and all information could be found on <http://www.fsb.hr/crsndt>.
2. Several participants thought that the period from the 2nd WG5 meeting to MATEST 2001 would be too long to combine in further work the scientific efforts. As a consequence, it was determined to held the 3rd WG5 meeting in a form of a workshop. All information will be on <http://www.fsb.hr/crsndt>. Workshop will include the on-site demonstration of the APLD in humanitarian demining in order to provide members with novel in the field.

Ad V

Having in mind the conclusions reached in discussion about the subsequent topics, the resolutions of the 2nd WG5 meeting were formulated as follows:

1. Method of providing the WG5 members with rather broad range of information regarding not only important R&D information, but also technical, commercial, as well as people fundus related information, in particular should be worked upon;
 - the listing of organisations for possible co-operation,
 - the listing of companies
 - involved in demining,
 - selling equipment for humanitarian demining,
 - training personnel for demining,
 - related to possible support and financing
 - the listing of programmes and projects (including profiles of experts needed),
 - the listing of journals for APLD possible dissemination
 - the listing of all prospective landmines detection methods, supported with information whether for a particular method validation exists, giving additional details about the validation.
2. In the method, in addition to the points listed, there will be included the tasks to
 - consider the invitation of specialists of related fields,
 - organise the workshops in regular time intervals in order to maximise the information spreading and synergetic effect among the WG5 members, and in particular will

organise the 3rd EFNDT WG5 - APLD meeting in April 2001, in National Park Plitvice, Croatia, devoted to the state-of-the-art in landmines detection. Precise date will be given later on <http://www.fsb.hr/ndt/wg5-apmd/wg5-apmd.html>.

3. The WG5 will work on

- standardisation covering the landmines detection procedures, equipment usage and demining personnel training in such a way that it does not collide with the R&D,
- procedures of performance demonstration for landmines detection equipment, demining personnel, and detection procedures.

Ad VI

The present members were informed about the *Special Posters auction*, held during 15th WCNDT. In it, 40 posters were presented, all made by German students during the UNICEF Year 1999 and related to the students' expressions about landmines and their effects on humans. The posters were shown in the auction, that was made possible thanking to WCNDT organising committee support and understanding. The organisers of the auction were Prof. Vjera Krstelj (Croatia) and Prof. Hermann Wüstenberg (Germany). Large efforts in performing the auction were taken by Mrs. Marianne Wündrich-Brosien (Germany) and Mrs. Zdenka Kuhta (Croatia), that were all voluntaries. In the auction every interested person could have donated some amount and get a particular poster as a souvenir. The amount collected will be used to enable additional efforts of the EFNDT WG5 – APLD for the Mine free world.. Up to now the list of donators, ordered from the largest donator, is the following: Dr. Giuseppe Nardoni, on behalf of the 15th WCNDT, Deutsche Gesellschaft für Zerstörungsfreie Prüfung, Croatian Mine Action Centre, Institut Dr. Förster, Germany, SER. CO. TEC., Italy, Krautkramer, Germany, Olympus, Germany, MATKONERG, Croatia and MATKONERG, Slovenia. We are taking a freedom to inform that auction is still open for your kind contribution in which respect one should contact WG5-APMD.

The members agreed that the collected money be used for supporting WG5 activities. In addition, they determined unanimously that a visit to MATEST 2001 is to be paid to a student, the poster of whom obtain a maximum donation.

In 19:50 the meeting was closed.

This web site is official version of WG 5 - APLD. Last updated: February 1st 2001.
Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr



1st Call for International Workshop Antipersonnel Landmines Detection State-of-the-art

National Park "Plitvicka Jezera" Croatia,

April 5th - 6th, 2001

**The 3rd Meeting of EFNDT WG5 - for
Antipersonnel Landmines Detection**

Aims and Scope

The Workshop is intended for the experts in antipersonnel landmines detection to share the achievements reached in developing various landmines detection methods and techniques, and to discuss the future of these. During Workshop, there will be invited experts' presentations of a particular detection method and specific applications, round table discussions, as well as demonstration of existing landmines detection methods and procedures in test fields.

The Workshop was planned at the [2nd EFNDT WG5 - APMD Meeting](#), where it was recognised that a broader community of experts in the related fields could contribute to bringing about the further progress. During the Workshop, the 3rd Meeting of EFNDT WG5 - APLD will take place.

Contents

- [Aims and Scope](#)
- [Organisers and Committees](#)
- [Venue and Program](#)
- [Registration deadline and Workshop fee](#)
- [How to reach National Park](#)
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Organisers

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[EFNDT WG5 - APMD](#)

Croatian Society of Non-Destructive Testing - [CrSNDT](#).

Committees

Vjera Krstelj, EFNDT WG5 - APLD Convenor

Honorary Committee

Damir Gorseta

Nenad Gucunski

Irena Leljak

Rainer Link

Ana Lypolt

Piotr Pregowski

Hermann Wüstenberg

Organising Committee

Davor Antonic

Damir Markucic

Josip Stepanic

Venue of the Workshop

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In order to motivate the gathering, the pleasant place chosen.

The Workshop will be held in [Hotel "Jezero"](#), in [National Park "Plitvicka Jezera"](#) in [Croatia](#), April 5th and 6th, 2001

Workshop program

[Workshop program](#) in details.

In addition, the [agenda](#) of the 3rd Meeting will than be presented.

Language

The official language of the Workshop is English.

Registration deadline and Workshop fee

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We kindly ask you to send us your [registration form](#) not later than March 21st 2001

The non-members of WG5 pay the Workshop fee of 90 EUR.
There is no Workshop fee for WG5 members.

The fees are payable through the following bank transfer:

Zagrebacka banka
SWIFT: ZABA HR 2X
2500-3261654
Remark: Workshop

Registration and written materials

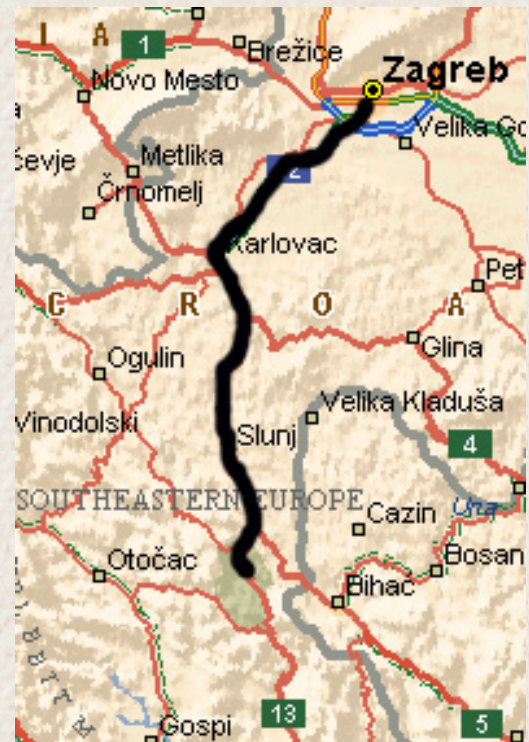
The registration will take place on 5th April, 10:00-11:00, at the registration Desk in Hotel "Jezero".
Written materials - invited lectures and Workshop conclusions - will be disseminated afterwards.

How to reach National Park "Plitvicka Jezera"

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The National Park "Plitvicka Jezera" is 120 Km south of Zagreb.
From Zagreb You can come to National Park by car, or bus.

- For car travellers, we suggest the following route:
 1. highway E59 Zagreb-Karlovac (app. 45 km)
 2. road E59 Karlovac-Slunj (app. 45 km), and
 3. road E71 Slunj-National Park "Plitvicka Jezera" (app. 30 km)
- If using a bus, please find useful a [bus time table](#)



Accommodation

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Reservations and additional information may be found on web pages of [Hotel "Jezero"](#).

The informative prices for the **Workshop participants** are:

Single room + breakfast	40 EUR	304 HRK
Half board	50 EUR	384 HRK
Full board	60 EUR	464 HRK
National Park tax	0,6 EUR	4,5 HRK

This page was visited
 times.

Send questions, comments and suggestions to: [Organising Committee](#).

Last updated: February 28th, 2001

EFNDT Working Group 5 - of Antipersonnel Landmines Detection

Minutes of the 3rd Meeting

National Park *Plitvicka Jezera*, April 5th 2001

Place: Croatia, National Park *Plitvicka Jezera*, Hotel Jezero

Time: April 5th 2001, 17:30-21:35

Agenda:

1. Accepting the [Minutes](#) of the 2nd EFNDT WG5 - APMD meeting, Doc15,
2. Objectives and working strategy of EFNDT WG5 - APMD,
3. Members presentation,
4. International Conference on APMD, [MATEST 2001](#) – *NDT in Environment Protection at the beginning of the 21st century*,
5. Participation of WG5 in European related activities,
6. Future tasks,
7. Standardisation,
8. Other topics.

Participants in alphabetic order:

WG5 members; Davor Antonic, Tomaz Apih, Uwe Ewert, Ferenc Fücsök, Nenad Gucunski, Vjera Krstelj (WG5 convenor), Rainer Link, Ana Lypolt, Damir Markucic, Marko Maucec, Piotr Pregowski (WG5 convenor deputy), Josip Stepanic, Zdravko Terze, Hermann Wüstenberg;

Guests of the meeting; John Dean (EC JRC Ispra), Vjekoslav Majetic (DOK-ING Director), Sandor Molnar (EOD Dept., Hungary), Nikola Pavkovic (CroMAC), Tomislav Dusanic (invited mine awareness artist, Osijek).

Meeting conclusions:

Members of WG5 are interested to work on projects related to landmine detection and clearance, in what Quality Management is implemented. The very essence of such a pilot project, the so called Megaproject, has been already considered by prof. Krstelj. The idea of this project is that local population should be properly involved in the project of mine clearance activities, providing them with equipment and support for this task. The main difference from conventional approach is in the fact that in the existing context, after mine clearance the local population does not come back. Following that approach, after the clearance is done, the local population is already at the place, and with proper modifications the equipment for clearance of mines can be used after it for the agricultural work that is very promising one in such a chemically non-polluted area. Financing of the project could be done by relevant institutions which support mine detection and clearance, by redistribution of money already planed for clearance by professionals and with support from potential investors. Drafts of projects will be disseminated to all the WG 5 members for adding and suggesting their contribution to the project.

The work on standardization is very important and should be concerned permanently. Regarding CEN WG126, our group will cooperate and give any support needed. Again it was emphasized that terminology is very important and should be the first one to start with. The performance demonstration procedure is a crucial task since it is urgently needed in the field.

Members agreed that 4th EFNDT WG 5 - APMD meeting be held during [MATEST 2001](#) Conference.

In final discussion members emphasized once again that topics in International Workshop were highly informative, and that visiting of minefield was extraordinary experience with great value for their further work.

The members addressed plenty of gratitude to the EFNDT WG5 convenor prof.Krstelj. She extended gratitude to Mr. Damir Goršeta, Director of Mine Action Center and his associates for fruitful cooperation in organization of this demanding event.

In 21:35 the meeting was closed.

This web site is official version of WG 5 - APMD. Last updated: October 11th 2001.

Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr

The Fourth Meeting of EFNDT WG5

Working Group 5 - for Antipersonnel Landmine Detection

(WG 5 - APLD)

Organizer of the meeting

The organizer of the meeting is Croatian Society for Non-Destructive Testing - [CrSNDT](#).

Place, time and lasting of the meeting

The fourth meeting of the WG5-APLD members and other persons interested in its work is planned to be held in Cavtat - Dubrovnik, during International Conference [MATEST'01](#).

Information about the precise place and time of the meeting will be determined later, and will be given at the Information Desk of the MATEST'01 Conference.

Language

The official language of the Meeting is english language.

The meeting announcement and agenda

The meeting announcement and agenda are [here](#).

Meeting fee and application deadline

In accordance with WG5-APLD objectives, the meeting is free with no application deadline.

Written materials

Written materials will consist of the conclusions of the meeting and will be disseminated afterwards.

Last updated: 3. September 2001.

Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr

EFNDT Working Group 5 - of Antipersonnel Landmines Detection

Minutes of the 4th Meeting

Cavtat - Dubrovnik, September 20th 2001

Place: Croatia, Cavtat, Hotel *Croatia*

Time: September 24th 2001, 18:30-20:30

Agenda:

1. Opening of meeting,
2. Roll call of participants,
3. Adoption of the agenda,
4. Accepting the [Minutes](#) of the 3rd EFNDT WG5 - APLD meeting, Doc19,
5. Change of the WG5 name,
6. Information from the convenor,
7. Reports from CEN/BT 126, 1st and 2nd meetings,
8. EFNDT WG5 - APLD relation to: European Commission (EC), European Commission for Standardization (CEN), CEN/BT/WG 126, UN Mine Action Service (UNMAS), Geneva International Centre for Humanitarian Demining (GICHD), International Test and Evaluation Programme for Humanitarian Demining (ITEP),
9. 8th ECNDT - Barcelona Conference,
10. Information about activities, members presentations,
11. Outreach activities,
12. Date and place for the 5th WG5 - APLD meeting,
13. Any other business.

 Add 2.

Participants in alphabetic order:

WG5 members; Davor Antonic, Jiri Chladek, Nenad Gucunski, Vjera Krstelj (WG5 convenor), Rainer Link, Ana Lypolt, Damir Markucic, Kurt Osterloch, Josip Stepanic, Hermann Wüstenberg;

Guests of the meeting; Tom Bloodworth (EC JRC Ispra representative), Kresimir Borcic (Shipyard Viktor Lenac), Ben-Zion Fuks (Israel Aircraft Industries), Damir Jaksic (Croatian Mine Action Center), Christine Müller (BAM - Berlin), Marianne Wündrich-Brosien (NGO Friedensinitiative Zelendorf-Berlin).

 Add 3.

Agenda was unanimously adopted.

 Add 4.

Minutes of the 3rd WG5 meeting were unanimously adopted.

 Add 5.

The members unanimously agreed to change the WG5 name in EFNDT WG5 for Antipersonnel Mines Detection (APMD), and asked WG5 Convenor to report that change to EFNDT Board of Directors.

 Add 6. & Add 10.

Prof. Krstelj informed present members and guests about International Workshop State-of-the-art in Landmines Detection, held in National Park Plitvicka Jezera in April 2001, organised by EFNDT WG5- APLD and CrSNDT. Meeting was successful, and brought about additional impetus to WG5 efforts toward further work on state-of-the-art in mine detection. On the meeting, members unanimously agreed with further concentrating on two projects: the project oriented toward prodger development, and the strategic project oriented toward state-of-the-art in mines detection.

On this meeting, members unanimously agreed to join the efforts on the project regarding the incorporation of advanced sensing devices in the prodger used regularly in the humanitarian demining. The ultimate objective of such a combined work is development of the Fast prodger, the mine detection device which would bring about faster, and safer mine detection without interfering with the detection probability and reliability. The prodding is chosen as the method because the members agreed that there is a large possibility for obtaining significant results in rather short time interval. The members decided to bring the project on the international level.

Add 7.

Dr. Bloodworth, Dr Osterloch and Dr Antonic reported about their activities related to WG5 objectives.

Add 8.

According to the conclusions of 3rd meeting and with help provided by EFNDT president Mr Roche, WG5 Convenor, Prof. Krstelj was accepted as WG 5 delegate in CEN/BT/WG 126. Members of WG5 acknowledged the help provided by MR. Roche.

Dr. Bloodworth will help WG5 members, Dr. Mueller and Dr..Osterloch, to establish contacts with ITEP.

Add 9.

Dr. Markucic reported that WG5 members activities resulted in rather large number of landmines detection oriented papers presented during 15th WCNDT, Rome 2000. Many of the articles originated in Croatia as a result of Croatian research and development projects. In addition to that, all WG5 members are stimulated to present their work in similar way. As a specific opportunity, he told about the 8th ECNDT, to be held in Barcelona, June 2002.

Mr. Stepanic reported that a group of papers, written by Croatian authors, WG5 members, was prepared for 8th ECNDT and sent.

WG5 members asked the WG5 Convenor for efforts regarding possible inclusion of the three papers prepared for the 8th ECNDT, which were not sent yet.

The meeting participants, especially Dr. Link, Prof. Wüstenberg and Mr. Fuks, were pleased with the MATEST'01 Conference. They described the Conference as successful, and laud the content of papers accepted.

Add 10.

Dr Mueller has started participating WG5 activities with her great experience and knowledge in evaluating reliability of inspection. Dr Markucic is also involved in this activities contributing with repeatability and reproducibility analysis of testing. They have reported that in the near future the example of demining data will be provided by CroMAC (Croatian Mine Action Center, HCR) with purpose to perform instance analysis of achieved reliability by mine detection carried out. Accomplishment of example analysis is at first place dependent on the completeness of the data. Members agreed unanimously to work on the Fast Prodder project, and to bring it on the international level.

Add 11.

The members decided that WG5 should initiate the international projects related to mines detection, and make links with relevant institutions.

Add 12.

The members agreed that the 5th EFNDT WG5 - APLD meeting be held in Zagreb, during 10th week of 2002.

In 20:30 the meeting was closed.

This web site is official version of WG 5 - APLD. Last updated: January 9th 2002.
Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr

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The Fifth Meeting of EFNDT WG5

Working Group 5 - for Antipersonnel Mine Detection

(WG 5 - APMD)

Organizer of the meeting

The organizer of the meeting is Croatian Society for Non-Destructive Testing - [CrSNDT](#).

Place and time of the meeting

The fifth meeting of the WG5-APMD members and other persons interested in its work is planned to be held in

[Center of Technology Transfer](#) in Zagreb, March 4, 2002.

The meeting begins at 10:00 AM. The predicted end of the Meeting is about 17:00 PM.

Venue, accomodation and weather

You can come to Zagreb in a variety of ways, e.g. using car, train, [bus](#), or [plane](#).

Prices, and links to several Zagreb hotels are [here](#).

For detailed plan of the area you may wish to consult [this](#) or [that](#) map.

You may be interested in [weather forecast](#) and [other information](#) about Zagreb.

Language

The official language of the Meeting is english language.

The meeting agenda

The meeting agenda is [here](#).

Meeting fee and application deadline

In accordance with WG5 - APMD objectives, the meeting is free with no application deadline.

Written materials

Written materials will consist of the conclusions of the meeting and will be disseminated afterwards.

Last updated: 25. February 2002,

Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr

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EFNDT Working Group 5 - for Antipersonnel Mines Detection

Minutes of the 5th Meeting

Zagreb, March 4, 2002

Place: Zagreb, Center of Technology transfer,

Time: March 4, 2002, 10:00-16:15

Agenda

- I. Opening of meeting,
- II. Roll call of participants,
- III. Adoption of the agenda,
- IV. Accepting the [Minutes](#) of the 4th EFNDT WG5 - APMD meeting, Doc. No. 20,
- V. Information from the convenor,
- VI. Guest presentation: *Society of Engineers in Humanitarian Demining*,
- VII. Project proposals introduction:
 1. Davor Antonic: *Advanced Mine Detection Technologies Evaluation*,
 2. Damir Markucic and Christine Müller: *Reliability of Mine Detection*,
 3. Vjera Krstelj: *Ultrasonic Fast Prodder*,
 4. Marko Maucec: *Assesment of nuclear techniques for identification of landmines*,
 5. Ivan Hrvoic and Josip Stepanic: *Remnants of Antipersonnel Mines Sensitive Electromagnetic System*,
- VIII. Presentation: *Technologies and Recent Developments to Inspect Suspicious Objects*, by Kurt Osterloh,
- IX. 8th ECNDT, June 17-21, Barcelona,
- X. 3rd European American Workshop on NDE Reliability, September 11-13, Berlin,
- XI. Information about activities,
- XII. Date and place for future WG5 meetings,
- XIII. Any other business.

Participants:

Davor Antonic, Ferenc Fücsök, Nenad Gucunski, Vjera Krstelj (WG5 convenor), Rainer Link, Ana Lypolt, Damir Markucic, Marko Maucec, Kurt Osterloh, Josip Stepanic, Zdravko Terze.

Guests of the meeting:

Rudi Stipcic, Director of the demining company *Ru-Ru*,
Andjelko Vojvoda, representative of the demining company *Mungos*.

Meeting discussion:

Ad V

The WG5 convenor informed the members that WG5 and interested organisations started intensive work on the organisation of Mine Action Academy. It is planned as two-year, world-oriented study with the degree pyrotechnician engineer. It fills the need for thorough education for humanitarian demining and related activities, what is not covered in the existing short courses. The official language is english language.

Dr. Antonic presented curriculum in detail.

Prof. Gucunski and dr. Maucec pointed the need of relating the Academy with the UN, especially UNDP, and IAEA.

Prof. Gucunski emphasised that the idea is not to enlargen the number of working deminers, but to build a group of experts and managers.

Dr. Link asked about the precise determination of the Academy regarding both the University structure and the NDT teaching. He advised that essential elements of NDT teaching are included.

Dr. Osterloh pointed that optimal combination of well enough covered practical and academic part need to be found. He added that NDT structure could serve in forming the Academy program, despite the fact that there is no explicit mentioning of NDT in Academy title.

Gen. Stipcic pointed the urgency of the Academy formation, since it is planned to finish demining activities till 2010. He told that experience of existing, related Academies, e.g. Police Academy, could be useful.

Dr. Markucic told that drafts of proposal should be disseminated in order to make possible detailed discussion. He pointed that market study is needed in order to set the Academy profile.

Further in the discussion the issues of elective courses was raised, as well as that of learning about the advanced methods.

Prof. Krstelj concluded that the work toward realisation of Mine Action Academy will continue, and that the needed written material will be disseminated.

Ad VII

The proposals were presented, and were followed with the thorough discussion of meeting participants.

It was concluded that with the appropriate change of title, Proposal I, the most important of the proposals for WG5, includes other proposals as well. The guidelines should be to constructively co-operate with related institutions, and follow developed categorisations. The participants opinion was that WG5 is capable for that projects, the members are ready to participate in and will furthermore ask other people for participation in it.

In the discussion, members raised many questions of technical character. In particular, mr. Vojvoda pointed that his firm has the capabilities to test the presented, interested solutions, and Mr. Fucsok

raised the question of data fusion.

Ad VIII

Dr. Osterloh presented the state-of-the-art in inspection of suspicious objects. He critically discussed further detection and inspection approaches and place of standards.

Ad IX

The participants pointed the need to present a paper about the past WG5 work on the 8th ECNDT. The members agreed unanimously that Dr. Osterloh will present the paper with that topic.

Ad X

Dr. Terze presented the project proposal *Mobile Platform for Multi Sensor Detection*, and its relation with the existing project application frameworks.

Ad XI

The members agreed that the 6th EFNDT WG5 - APMD meeting is planned to be held in Barcelona, in June 2002, during the 8th ECNDT. Furthermore, the members agreed that the 7th WG5 - APMD meeting be one-day event, planned for October 2002.

At 16:15 Prof. Krstelj closed the Meeting.

[Back to WG5 homepage](#)

This web site is official version of WG 5 - APMD. Last updated: September 24th 2002
Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr

EFNDT Doc.No.: EFNDT/WG5-APMD/0205/Doc25

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WORKING GROUP ON ANTIPERSONNEL MINES DETECTION

Announcement to the 6th meeting of EFNDT WG5-APMD

Barcelona, June 19, 2002

Introduction

The [first meeting](#) of EFNDT WG5-APMD was held in Zagreb, on 22nd of November 1999.
The [second meeting](#) of EFNDT WG5-APMD was held in Rome, on 17th of October 2000.
The [third meeting](#) of EFNDT WG5-APMD was held in National Park *Plitvicka Jezera*, 5th - 6th of April 2001.
The [fourth meeting](#) of EFNDT WG5-APMD was held in Cavtat - Dubrovnik , 24th September, 2001.

The [fifth meeting](#) of EFNDT WG5-APMD was held in Zagreb , 4th March, 2002.

The WG5-APLD is acting on behalf of [EFNDT](#) and must refer to EFNDT *Board of Directors* for endorsement of its work and reports.

The confirmed list of WG5-APLD members is given [here](#).

Agenda

The agenda of the 6th WG5-APMD meeting is the following:

- Opening of meeting,
- Roll call of participants,
- Adoption of the agenda,
- Accepting the Minutes of the 5th WG5 Meeting,
- Information from the convenor,
- [3rd European-American workshop on NDE Reliability](#), September 11-13, 2002, Berlin,

- Information about activities, members presentations,
- Date and place for the next WG5 - APMD meeting,
- Any other business.

Start of the meeting - 14:00. Closure of meeting - at approx. 15:00 hrs.
Please do not hesitate to contact us for any further information or clarification.
We are looking forward to working with you and seeing you at the meeting.

With kind regards

WG5-APMD Convenor
Prof. Vjera Krstelj, Ph.D.

Last updated: 11. October 2002

Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr

EFNDT Working Group 5 - for Antipersonnel Mines Detection

Minutes of the 6th Meeting

Barcelona, June 19, 2002

Place: Barcelona, Palau de Congressos

Time: June 19, 2002, 14:15-15:00

Agenda

- I. Opening of meeting,
- II. Roll call of participants,
- III. Adoption of the agenda,
- IV. Accepting the [Minutes](#) of the 5th EFNDT WG5 - APMD meeting, Doc. No. 20,
- V. Information from the convenor,
- VI. 3rd European American Workshop on NDE Reliability, September 11-13, Berlin,
- VII. Information about activities,
- VIII. Date and place for future WG5 meetings,
- IX. Any other business.

Participants:

Miro Dzapò, Uwe Ewert, Ferenc Fücsök, Alexey Kovalev, Vjera Krstelj (WG5 convenor), Ana Lypolt, Damir Markucic, Christina Müller, Miroslav Omelic, Kurt Osterloh, Josip Stepanic, Waldemar Swiderski.

Guests of the meeting:

Jörg Beckmann, former WG5 member,
Vladimir Klyuev, president of RSNDTTD.

Meeting discussion

Dr. Müller described the 3rd European-American workshop on reliability in NDE and demining. She emphasised the work toward ISO standard about performance demonstration. She informed the members about the *ad hoc* WG5 meeting.

Dr. Osterloh presents the work regarding demining oriented project, with three main activities:

- further prodder development,

- state-of-the-art regarding NDT & APMD,
- reliability approach assessment.

In his opinion policy of the group should be open mindness to possible application of new methods and techniques. He told the participants about the EU projects, that FOI - Sweden is directed to possible explosive sensors, and that the existing *Network of excellence* for faster and more efficient R&D in APMD could be used for exchange programs and travelling expenses.

Dr. Ewert told that after the connection with the *Network of excellence* is established, the concrete projects should be started, hence list of priorities should be formulated. He asked about the inclusion of interested Military Academies.

Prof. Krstelj told the WG5 will apply for an EU project, and further explained organisational details, that an EU member should be a main contractor, and that many countries are needed.

Prof. Krstelj described the *Mine Action Academy*, to which the application of the 60-70 students is expected. The title after graduation will be engineer of pyrotechnology. The funding is expected from UN and interested countries. Along with lectures, the work on prepared polygons is included.

Mrs. Lypolt agreed with prof. Krstelj about the proposed *Mine Action Academy* oriented work.

Mr. Dzapo added further details about *Mine Action Academy* and welcomed additional ways of thinking.

Dr. Klyuev told about the interest of Russia in that topic, and that on NDT Conference in Russia a separate section will be the one about landmines detection.

Dr. Markucic and Mr. Omelic supported the dr. Klyuev's initiative and connected it with the recent 3rd European-American workshop on reliability in NDE and demining.

Dr. Swiderski told that the understanding about the demining problem is raised with the accidents, and mentioned recent accident in Polish troops in Afghanistan.

Mr. Fucsok told that the WG5 openness and transparency is to be contrasted to prevalently secret working mode of other organisations.

Dr. Beckmann told about the probable future specialisation of WG5 members, and possible need for tuning.

For the date and place of 7th Meeting of WG5, the members determined October 7, 2002, Zagreb.

At 15:00 Prof. Krstelj closed the Meeting.

This web site is official version of WG 5 - APMD. Last updated: September 30, 2002

Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr

[Back to WG5 homepage](#)

The Seventh Meeting of EFNDT WG5

Working Group 5 - for Antipersonnel Mine Detection

(WG 5 - APMD)

Organizer of the meeting

The organizer of the meeting is Croatian Society for Non-Destructive Testing - [CrSNDT](#).

Place and time of the meeting

The seventh meeting of the WG5-APMD members and other persons interested in its work is planned to be held in

[Center of Technology Transfer](#) in Zagreb, October 7, 2002.

The meeting begins at 10:00 AM. The predicted end of the Meeting is about 17:00 PM.

Venue, accomodation and weather

You can come to Zagreb in a variety of ways, e.g. using car, train, [bus](#), or [plane](#).

Prices, and links to several Zagreb hotels are [here](#).

For detailed plan of the area you may wish to consult [this](#) or [that](#) map.

You may be interested in [weather forecast](#) and [other information](#) about Zagreb.

Language

The official language of the Meeting is english language.

The meeting agenda

The meeting agenda is [here](#).

Meeting fee and application deadline

In accordance with WG5 - APMD objectives, the meeting is free with no application deadline.

Written materials

Written materials will consist of the conclusions of the meeting and will be disseminated afterwards.

Last updated: September 24, 2002,

Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr

EFNDT Working Group 5 - for Antipersonnel Mines Detection

Minutes of the 7th Meeting

Zagreb, October 7, 2002

Place: Zagreb, Center of Technology Transfer

Time: October 7, 2002, 10:00-14:20

Agenda

The agenda of the 7th WG5-APMD meeting is the following:

- Introductory part:
 - Opening of meeting,
 - Roll call of participants,
 - Review of the agenda objectives (written at the end of this document)
 - Adoption of the agenda and its objectives,
- Discussion:
 - Accepting the [Minutes](#) of the 6th WG5 Meeting,
 - Information from the convenor - status of the project *Mine Action Academy*,
 - Application of the *Mine Action Academy* for the LIFE programme,
 - Collect feedback from the members and confirm buy in,
 - Presentation by Dr. Kurt Osterloh: *Technologies and Recent Developments to Inspect Suspicious Objects*,
 - Presentation by Dr. Tomaz Apih: *NQR Demining*, project within the NATO Science for Peace program,
 - Information about activities, members presentations,
 - Date and place for the 8th WG5 - APMD meeting,
 - Any other business.

The agenda objectives:

- Review, collect and adopt the *Mine Action Academy* project proposal,
- Identify interested and included parties.

Meeting discussion

Ad. 1. and 2.1.

The agenda, its objectives and the Minutes of the 6th Meeting were unanimously accepted.

Ad. 2.2.-2.4.

Prof. Krstelj, WG5 Convenor, informed the members about the project Mine Action Academy (MAA) which was initiated two years ago. Presently, the approval of National Board for Higher Education, and strong support from other institutions and people close to demining are obtained. The MAA contributes to filling the gap between the proclaimed 2010 finishing of humanitarian demining and existing demining rate.

Prof. Krstelj emphasised significant role of EFNDT in MAA establishing, as EFNDT's existing networking and developed structure of education is transferable onto MAA. In general, according to her, there are many aspects of MAA project for which the existing NDT organisation scheme is relevant and applicable. Furthermore, in NDT a risk is incorporated throughout the procedures, and the existing level system is the solution to performing high-risk work, hence should be properly represented in MAA.

She remarked that intense international support induces further actions like is MAA project proposal for EC LIFE (3rd countries) programme.

Mr. Stepanic reported about preparing the MAA project proposal for EC LIFE (3rd countries) programme. Dr. I. Krstelj leads the work on proposal, and Mr. Lawlor is contributor to it.

Dr. Markucic reported about excellent acceptance the MAA project obtained during 3rd European-American Workshop on Reliability of NDE and Demining, September 10-13, 2002, Berlin. One of the consequences was A. Sieber's invitation of the MAA project representatives to Regional Conference in Geneva.

Dr. I. Krstelj reported about the successful work in describing the MAA project to interested parties at Regional Conference in Geneva. He held the presentation about the MAA with emphasis put on added value and related management topics. Basic idea of MAA is to provide the world market with individuals capable of technical, management and other aspects needed in humanitarian demining. There will be two different types of education: short-term courses providing attendees with certificate for Mine Action Specialist and longer-term education providing the students with the degree Mine Action Engineer. Dr. I. Krstelj stated that with good management and quality assurance impressive results can be obtained and mentioned Croatian Mine Action Centre as example for that. Further work regarding MAA project will focus on finalising logistics, seeking candidates for International Advisory Board and seeking for further financial support.

Dr. Link supported the MAA project, which he considers interesting, and told that certification scheme based on standards of education in humanitarian demining be formed for MAA, so that short-term courses are aligned with the existing NDT qualification scheme. In his opinion quality control enters the MAA project and general humanitarian demining work in a variety of aspects. He connected these topics with the case of third-party certification in NDT. He told that EFNDT can provide a support for MAA project, and that representatives from other EU mine affected countries should be incorporated. Furthermore, the MAA should be compared with the related, existing programs in the world so that unnecessary similarities are removed.

Mrs. Grubic-Sutara told about the two documents with EC policy about mine affected regions. The electronic versions, provided by her, are put into xload directory (see Ad.2.7. for description of xload directory).

The WG5 members unanimously accepted the MAA project proposal and further actions regarding it. WG5 members unanimously agreed to send a letter of intention to EFNDT Board of Directors to get support for the further work on the MAA project.

Ad. 2.5. and 2.6.

Dr. Osterloh presented the overview through the existing projects focused on mine detection methods and techniques, from the technical and related broadened point of view. Since the last WG5 meeting, among the methods the radiography application made the highest progress. He stated that with increasing computer capabilities the development of integrated inspection technique looks more promising than hunting for a unique technique.

Dr. Apih presented the NATO accepted project Nuclear Quadrupole Resonance Demining, in which international team of scientists and experts will work on research and development of a particular way of explosive content detection and confirmation.

Ad. 2.7.

Dr. Markucic reported about ongoing activities regarding the project focused on Reliability assessment, as proposed and accepted at 5th WG5 meeting. C.Müller and U.Ewert invited D. Markucic for two months visit research to BAM Berlin. Expenses have been funded by Sequa, BAM, DGZfP and University of Zagreb. Our efforts on Reliability of Mine Detection have been included in Network of Excellence for Mine Action Technologies (MAT) and connected to Test and Evaluation and Standardisation topics. In near future it is expected that integrated projects has to be prepared according to the settled Expression of interest for MAT. Participants agreed that WG5 will support this efforts and also agreed that ongoing progress of this activity will be described and published on the dedicated web page which is going to be hosted at official WG5 web site. According to the conclusion from the previous WG5 meeting a directory with access restricted to WG5 members was created within the WG5 web site, at www.fsb.hr/ndt/wg5-apmd/xload.

Dr. Markucic proposed the explicit policy statement and suggested categorisation of on-line documents in future.

Participants unanimously agreed about that and about the following three categories:

- **public** - to be published on the official web pages of WG5;
- **members** - to be uploaded in xload directory with access restricted only to WG5 members;
- **individual** - only information about document is published on the WG5 web site, document can be revealed by contacting the author of the document.

Ad. 2.8.

For the date and place of 8th Meeting of WG5, the members agreed for April 16, 2003, Zagreb. At 14:20 Prof. Krstelj closed the Meeting.

This web site is official version of WG 5 - APMD. Last updated: October 23, 2002

Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr

EF European Federation for Non-Destructive Testing **NDT**

WORKING GROUP ON ANTIPERSONNEL MINES DETECTION

EFNDT WG5-APMD/0210/Doc29/Pages1-3

Minutes of the 7th EFNDT WG5 - APMD Meeting

Centre of Technology Transfer, Zagreb, October 7, 2002

MINUTES OF THE 7th MEETING

Place: Centre of Technology Transfer, Zagreb

Time: October 7, 2002, 10:00-14:20

Agenda:

1. Introductory part:
 - 1.1. Opening of meeting,
 - 1.2. Roll call of participants,
 - 1.3. Review of the agenda objectives (written at the end of the Agenda)
 - 1.4. Adoption of the agenda and its objectives,
2. Discussion:
 - 2.1. Accepting the Minutes of the 6th Meeting,
 - 2.2. Information from the convenor – status of the project *Mine Action Academy*,
 - 2.3. Application of the *Mine Action Academy* for the LIFE programme,
 - 2.4. Collect feedback from the members and confirm buy-in,
 - 2.5. Presentation by Dr. Kurt Osterloh: *Technologies and Recent Developments to Inspect Suspicious Objects*,
 - 2.6. Presentation by Dr. Tomaz Apih: *NQR Demining*, project within the NATO Science for Peace programme
 - 2.7. Information about activities,
 - 2.8. Date and place for the 8th WG5 meeting,
 - 2.9. Any other business.

The agenda objectives:

- Review, collect and adopt the *Mine Action Academy* project proposal,
- Identify interested and included parties.

Participants in alphabetic order:

WG5 members: Davor Antonic, Tomaz Apih, Miro Dzapov, Melanija Grubic-Sutara, Vjera Krstelj (WG5 convenor), Rainer Link, Ana Lypolt, Damir Markucic, Kurt Osterloh, Ivan Steker, Josip Stepanic.

Guests of the meeting: Igor Krstelj (Centre of Technology Transfer), Stephen Lawlor (Centre of Technology Transfer)

Meeting discussion:

Ad. 1. and 2.1.

The agenda, its objectives and the Minutes of the 6th Meeting were unanimously accepted.

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Ad. 2.8.

For the date and place of 8th Meeting of WG5, the members agreed for April 16, 2003, Zagreb.

At 14:20 Prof. Krstelj closed the Meeting.

[Back to WG5 homepage](#)

The Eighth Meeting of EFNDT WG5

Working Group 5 - for Antipersonnel Mine Detection

(WG 5 - APMD)

National Park *Brijuni Islands*, September 30, 2003

 Organizer of the meeting

The organizer of the meeting is Croatian Society for Non-Destructive Testing - [CrSNDT](#).

 Place and time of the meeting

The eighth meeting of the WG5-APMD members and other persons interested in its work is planned to be held during the International Conference [MATEST'03](#).

The agenda of the Meeting is [here](#).

Last updated: September 5, 2003,

Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr

Minutes of the 8th EFNDT WG5 - APMD Meeting

Hotel *Neptun* - Istra, National Park *Brijuni Islands*, September 30, 2003

Place: Hotel Neptun-Istra, National Park *Brijuni Islands*, Croatia

Time: October 1, 2003, 14:00-15:00

Agenda:

1. Opening of meeting,
2. Roll call of participants,
3. Adoption of the agenda,
4. Accepting the Minutes of the 7th WG5 Meeting,
5. Information from the convenor,
6. Information about activities, members presentations,
7. Mine Action Academy – status of the project,
8. Date and place for the 9th WG5 - APMD meeting,
9. Any other business.

Participants in alphabetic order:

WG5 members: Davor Antonic, Mate Gaal, Nenad Gucunski, Ferenc Fücsök, Vjera Krstelj (WG5 convenor), Rainer Link, Ana Lypolt, Damir Markucic, Miroslav Omelic, Josip Stepanic.

Guests of the meeting: Mirjana Fuduric-Jelaca (Higher School for Work Safety - Zagreb), Nikola Gambiroza (Deputy Director of Croatian Mine Action Center).

Meeting discussion:

Ad. 5. and 7.

Prof. Krstelj informed participants about the WG5 work since the last Meeting and about the start of the work of *Polytechnic Velika Gorica*, the program of which includes *Mine Action Academy*. School year will start in two weeks, and the interest of students is larger than expected.

Prof. Krstelj presented information from Dr. Pregowski, present Deputy of WG5 Convenor, about objective reasons preventing his further active work regarding WG5. Because of that WG5 members proposed electing the new Deputy of WG5 Convenor. The members of WG5 unanimously agreed upon the proposal of Prof. Krstelj and chose Dr. Kurt Osterloh, from BAM - Berlin, as the new Deputy of WG5 Convenor.

Dr. Link suggested, regarding the fruitful WG5 discussions about the mine detection technologies and related activities during previous WG5 meetings, preparing a publication for promotion of WG5 work, dissemination of results achieved and further broadening of potential membership within the scientific and expert community. The participants unanimously accepted the suggestion and furthermore agreed upon preparing the draft of such a material, with determined structure, before the next WG5 meeting. The draft will be discussed on the *ad hoc* WG5 Meeting, to be held during the ITEP Workshop *Reliability Tests for Humanitarian Demining*, BAM – Berlin, December 16-17, 2003.

Ad. 6.

Participants discussed about potential financing of the projects related to WG5. In particular, the project call by USA Department of Defense was discussed. Unfortunately, the call came too late, as within one week since the Meeting, the project proposals should be prepared and submitted. Regarding that, the participants concluded to work toward finding more in advance for such activities in future.

Mate Gaal presented the work of Dr. Kurt Osterloh, who was unable to participate at the Meeting, regarding the role of NDT methods and techniques in humanitarian demining.

Ad. 8.

Date and place of the 9th WG5 Meeting will be determined later.

At 15:00 Prof. Krstelj closed the Meeting.

EFNDT WG5 - APMD, Croatian Society for Non-Destructive Testing & Center for Technology Transfer,
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e-mail: crsndt@fsb.hr, URL: <http://www.fsb.hr/ndt/wg5-apmd>

Minutes of the EFNDT WG5 - APMD *ad hoc* Meeting

Montreal, September 30, 2004

Place: Palace of Congress, Montreal, Canada

Time: September 01. .2004., 12^h-

Agenda:

1. Opening of meeting,
2. Information from the convenor
Information about activities,
Proposals for scope extension of WG5 and ICNDT correlations,
3. Mine Action Academy, MAA, presentation

Participants:

Croatia	Ana	Lypolt	CrSND	ana.lypolt@fsb.hr
Ukraine	Vladimir. A.	Troitckiy	UK SNTD	usndt@ukr.net
Ukraine	Igor. J.	Shevchenko	UK SNTD	acnk@ukr.net
Croatia	Tamara	Krstelj	CRO/Polytechnic College Velika Gorica	tamara.krstelj@vvg.hr
Israel	Amos	Notea	Technion	gaamos@tx.technion.ac.il
Israel	Gavriel	Shoef	Gabi Shoef LTD	gabi@gabishoef.co.il
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Germany	Rainer	Link	DGZfP	lk@dgzfp.de
Canada	Gerry	Koczerzuk	Canada, MBW	
Italy	Sergio	Ghia	ICNDT	ghia@icndt.org
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Malaysia	Mia	Sporer	Malaysia NDT	mia.sporer@precisionndt.com
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Belarus	Petr. P.	Prokhorenko	Belarus Association NDT	admcom@iaph.basnet.by
Russia	Vladimir	Klyuev	RSNTTD Russia	spektr@co.ru
Croatia	Alen	Stranjik	CRO/Polytechnic College Velika Gorica	alen.stranik@vvg.hr
Croatia	Vjera	Krstelj	CrSNDT	vk@fsb.hr

Ad 1.

Convenor of EFNDT WG5 Prof.V.Krstelj expressed appreciation to all of participant for the interest to attend ad hoc meeting of WG5 that was organized because of opportunity to come together and shortly discussed and prepare some issues which will be on the Agenda of the next WG5 meeting, and to open task how to extend the activity to the ICNDT were some scope of the WG5 activity should be undertaken since the 91 country in the world are Mine polluted and the NDT methods and diagnostics could be very valuable contribution to the Public safety.

Ad 2.

Prof. V. Krstelj shortly introduce the activities of the EFNDT WG5 and announced the 9th meeting of EFNDT WG5 that will take place on October 16, 2004 at hotel Dubrovnik in ZAGREB, during the International Conference MATEST 2004.

She expressed the importance of Safety (personal and environmental) and the increasing demands on NDT in service as well as in manufacture as a source of powerful related methods and technology that could be developed and implemented in the Mine and UXO detection as well as in many other threat diagnostics. This requires increased and accelerated R&D and Education as well as awareness of the value of NDT scope for safety purposes.

She initiated the debate about the possible extension of the scope of EFNDT WG5 and necessity of activating relevant scope into the ICNDT for the benefit upon the globe.

After very interesting discussion of all participants it was find out that there are very different approaches from different participants and the conclusion was to analysed carefully what would be the extension in scope of ICNDT and to prepare proposal to the ICNDT meeting.

Everybody agree that EFNDT WG5 did a good job in the activation of NDT in Mine detection and threat diagnostics at all, as a good extension of the potential methods and technology of NDT.

Mr. Gavriel Shoef and Mr. Amos Notea suggested to be open an ICNDT Working group in ICNDT for implementation of NDT in measurement, inspection, investigation and sophisticated diagnostics to support and advance the worldwide anti-terror efforts and to detect and alarm before the disaster happened.

Mr. Giuseppe Nardoni, the president of ICNDT meeting suggested to be open a new topic in WCNDT before the opening of working group in ICNDT, particularly that he expect this matter to be analyzed carefully in EFNDT WG5 taking care of the potentiality of the NDT and the great need in the world for security. He asked for a proposal for the ICNDT meeting tomorrow only for topics extension.

Prof. Kljuev expressed his opinion about the necessary activation of NDT in the national security, but he accept that the new scope in WCNDT is a good start.

Prof. Petr Prokhorenko made some comments about the differences when methods are used for safety, but he think that NDT is not for anti-terrorists security since the threat is wider then it could be controlled by NDT methods now.

Dr. Rainer Link pointed out the problems of intellectual property protection in the R&D since all activity is R&D results, and explained as a member of WG5 about the levels of confidentiality in the presentations of the results and in cooperation between the members of the WG5.

After very extracted because of the short time but vivid and comprehensive debate of all the participants the conclusion was that colleagues from Israel will prepare proposal for the new topic of WCNDT for the meeting of ICNDT on September 2. 2004. taking into consideration the debate performed and in consultation with the members of the WG5.

As a conclusion regarding the 9th EFNDT WG5 meeting in Zagreb was strongly suggested that EFNDT WG5 should include promotion and activity of NDT as foundation for Public Safety as it was suggested by the convenor and proceed with investigation and discussion what scope and extension of the topic to ICNDT is promising and proper for the NDT field of work.

Ad. 3.

The current status, progress and experience of the Mine Action Academy, MAA, at Polytechnic college Velika Gorica, a three-year higher school study for humanitarian demining was presented by Ms.T.Krstelj, executive director of the college. The second generation of Humanitarian demining study is in progress in Croatian language and the valued experiences were gained. International study is planed to start in November and students are invited from those countries which are mine polluted. T.Krstelj pointed out the general problem of students motivation for technical studies and particularly with studies which are not well known as a field of occupation. So all support in promotion of the humanitarian demining as an civil engineers job as well as support in lecturing process will be very appreciated by MAA.

In addition, in case of interest the visit to the location of MAA will be organized during the 9th EFNDT meeting in Zagreb.

The presentation was well accepted.

At 13:30 the meeting was closed.

The Minutes of the meetings were prepared by Ms. Ana Lypolt, executive director of CrSNDT, a host of EFNDT WG5.

Approved by:

Dr Rainer Link

WG5 member

Prof. dr. Vjera Krstelj

WG5 convenor

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The Nineth Meeting of EFNDT WG5

Working Group 5 - for Antipersonnel Mine Detection

(WG 5 - APMD)

Hotel *Dubrovnik* - Zagreb, October, 2004

 Organizer of the meeting

The organizer of the meeting is Croatian Society for Non-Destructive Testing - [CrSNDT](#).

 Place and time of the meeting

The ninth meeting of the WG5-APMD members and other persons interested in its work is planned to be held during the International Conference [MATEST'04](#).

The agenda of the Meeting is [here](#).

Last updated: September 9, 2004,

Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr

Minutes of the 9th EFNDT WG5 - APMD Meeting

Hotel *Dubrovnik*, Zagreb, October 14, 2004

Place and time of the Meeting: Hotel Dubrovnik, Zagreb at October 14, 2004, 15:00-16:30.

Draft Agenda:

1. Opening of meeting,
2. Roll call of participants,
3. Adoption of the agenda,
4. Accepting the Minutes of the 8th WG5 Meeting,
5. Information from the convenor,
6. Acceptance of the Minutes of the WG5 *Ad hoc* meeting held during 16th WCNDT,
7. Information about activities, members presentations,
8. Proposal: scope extension of WG5,
9. Mine Action Academy – status of the project,
10. Date and place for the 10th WG5 - APMD meeting,
11. Any other business.

Meeting discussion and conclusions:

Add 2

Participants in alphabetic order: (WG5 members and guests)

Branko Ceizek, Mate Gaal, Vjera Krstelj (WG5 convenor), Rainer Link, Ana Lypolt, Damir Markucic, Christina Muller, Miroslav Omelic, Kurt Osterloh, Josip Stepanic, Alen Stranjik, Muhamed Sućeska, Ivan Šteker,

Add 3.& 4.

Agenda and Minutes of the 8rd WG5 meeting were unanimously adopted.

Add 5.

Prof. Krstelj informed about the WG5 Ad hoc meeting held during 16th WCNDT in Montreal and the initiative of the members of ICNDT (discussed at the ICNDT General Assembly) to form the group similar to EFNDT WG5 or extend the scope of WG5 including all threats of explosive objects as well as to open WG5 to the affiliate members from ICNDT. The term Security and Safety were discussed as the new scope and the possible names of the group. The conclusion was to explore the possibilities at the next meeting of EFNDT WG5.

First define the scope and than the name.

Add 6.

Minutes of the *Ad hoc* meeting held during 16th WCNDT, were unanimously adopted.

Add 7.

The members discussed the tasks and results achieved.

Add 8.

Comments:

Dr. Osterloh; Public is more aware of terrorism than of mines. Important; What are the real needs. Existing solutions are important not to start from beginning that would required 6-7 years of intensive work. The paper with suggestions (Dr. Evert, Dr. Osterloh,) were submit.

Dr Link: first define the scope then the name, ICNDT mirror group is not necessary since EFNDT WG5 is open to them and they could be regularly included, EFNDT WG5 is one of the most active and effective group, we should care of spreading of informations,

Booklet with an information about the main methods, the overview of methods should be used as introduction and the publisher should be EFNDT

Dr. Krstelj: not to overlap and loose energy, the Critical knowledge is importante to get a progress, spreading of informations is very important but in 2-3 levels, we should take care of intelectual property and conflicts of interes, booklet and <http://www.fsb.hr/ndt/wg5-apmd/> is first level of informations open to everybody interested in this field and to inform and motivate NDT people and wider to join the group.

Dr. Osterloh; accept to cover radiography

Dr. Muller; will contribute with realibility topic; she add: EC will lunch program'Space and Security', consorcium should be formed within Europe, inform about EUDEM2 workshop in Brussels.

Dr. Markučič; we have to focus in the technical field,

CONCLUSIONS

1. EFNDT WG5 extends a scope to include all threats of explosive objects and remnants in civil environment conditions, such as mines, explosive devices (UXO, ERW and IED),
2. new name of EFNDT WG5 will be decided between the members and consultants

PUBLIC SAFETY or

PUBLIC SECURITY

detection technology of explosive devices

3. send a questionnaire to members to report their activities and interests
4. WG5 supports and will work o the harmonization of personnel in humanitarian demining to implements EFNDT (ISO EN) standards system,
5. WG5 will be open to the affiliated members from ICNDT and offers incubation of the groups from the USA, Asia, Africa and Australia.

Add 9.

Mr. Stranjik informed about Mine Action Academy at Polytechnic College Velika Gorica, 220 enrolled students; 36 students for Humanitarian demining/ Pyrotechnology ; International support is necessary since the mine poluted countries could not support students to study because those countries have low standard.

Mr. Šteker offered CROMAC poligone for students lecturing.

Dr. Link support to find a way for international funding, ask what is the estimate of the money needed

Dr. Krstelj; international cooperation and support in lecturing (visiting professors) is also important to exchange experience in this new study as civil profile.

Add 10.

Next meeting: April 2005 in the period of 12-22.

Add 11.

Conclusions from the meeting will be formulated and checked next day by Prof. Krstelj, Convenor and Dr. Osterloh, Vice-convenor.

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The Tenth Meeting of EFNDT WG5

Working Group 5 - for Antipersonnel Mine Detection

(WG 5 - APMD)

Opatija, 7. October 2005.

 Organizer of the meeting

The organizer of the meeting is Croatian Society for Non-Destructive Testing - [CrSNDT](#).

 Place and time of the meeting

The tenth meeting of the WG5-APMD members and other persons interested in its work is planned to be held during the International Conference MATEST'05, 7. October 2005., at 17:30.

The agenda of the Meeting is [here](#).

Last updated: October 4th, 2005.

Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr, CC to: [marina.bracun@fsb.hr](#)

Minutes of the 10th EFNDT WG5 Meeting

Place and time of the Meeting: Hotel 4 *Opatijska cvijeta*, Opatija – Croatia, 7 October, 2005, 13:30-15:15.

Draft Agenda:

1. Opening of meeting,
2. Roll call of participants,
3. Adoption of the agenda,
4. Accepting the Minutes of the 9th WG5 Meeting,
5. Information from the convenor,
6. Information about activities, members presentations,
7. Accepting the scope extension and the name of WG5,
8. Priority: preparation of the section *Humanitarian safety* at the 9th ECNDT – Berlin,
9. Date and place for the 11th WG5 - APMD meeting,
10. Any other business.

Participants (WG5 members and guests): Davor AntoniĆ, Źeljko DobranoviĆ, Damir Goršeta, Vjera Krstelj (WG5 convenor), Rainer Link (Secretary of 9th ECNDT), Slavko MajetiĆ, Zvonko Orehovec, Kurt Osterloh (WG5 deputy convenor), Josip StepaniĆ, Josip TuliĆiĆ.

Meeting conclusions:

Ad. 3. The agenda was unanimously accepted.

Ad. 4. The Minutes of the 9th WG5 Meeting were unanimously accepted.

Ad 5&6 Prof. Krstelj (convenor) and Dr. Osterloch (vice-convenor) informed the group about the news and needs to finalized the process of WG5 scope extension and the definition of the new related name. It was discussion between the members about work and activities.

Ad. 7. Following the recognised needs of protection against terrorism such as Chemical, Biological, Radiological and Nuclear threat as well as capabilities of non-destructive detection for neutralisation of explosive ordinance disposal (EOD), or improvised explosive devices (IED) and against WMD, the needs to develop methods and techniques to detecting public threats the decision to extend the scope was discussed and finishing the previously started process of the WG5 scope and title change.

The members unanimously decided the new title of WG5 to be

EFNDT WG5 – Public Security and Safety Technology

The name includes Detection and Protection Technology.

The convenor will ask the EFNDT BOD to accept the scope extension, announced the new scope of the EFNDT WG5 and accordingly a new title of the group at the next meeting of the BOD.

The new task of WG5 is in alignment with askings of ICNDT to join the group with such a scope as affiliate members.

Ad. 8. The change of the title *Humanitarian safety* of the session during 9th ECNDT in Berlin, 2006, was proposed. The new title suggested is *Public Safety & Security Technology*.

It was analysed the contribution of the members of WG5 to the ECNDT-Berlin that was not very well. It was aloud until Oct.20. 2005 to submit papers for the conference. (additional 15 days to activate members of WG5)

Ad. 9. The 11th Meeting of WG5 will be held in Croatia, 5 April 2006. The place will be announced with an invitation.

Convenor of WG5

Prof. dr.Vjera Krstelj

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The Eleventh Meeting of EFNDT WG5 – PSSndtT

Working Group 5 - for Public Security and Safety NDT Technology

(WG 5 - PSSndtT)

Centre of Technology Transfer,
I. Lucica 5, Zagreb, Croatia,
April 3rd - 4th, 2006.

Organizer of the meeting and workshop

The organizer of the meeting and workshop is Croatian Society for Non-Destructive Testing - [CrSNDT](#).

Place and time of the meeting and workshop

The eleventh meeting of the WG5 - PSSndtT members and other persons interested in its work is planned to be held in Centre of Technology Transfer, I. Lucica 5, Zagreb, Croatia, April 3rd, 2006., at 10:00 am.

Workshop will be held on April 4th, 2006., with duration 10:00-14:00. Location of the Workshop is the Mine Action Academy, Zagrebacka 3, Velika Gorica, close to Zagreb.

The agenda of the Meeting and Workshop is [here](#), and the Workshop programme is [here](#).

Last updated: March 9th, 2006.

Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr, CC to: marina.bracun@fsb.hr

EFNDT WG5

Working Group - for Public Security and Safety NDT Technology

- [EFNDT](#)
European Federation for Non-Destructive Testing
 - [ICNDT](#)
The International Committee for Non Destructive Testing
 - [CrSNDT](#)
Croatian Society of Non-destructive Testing
 - [9th European Conference on Non-Destructive Testing](#)
 - [MATEST 2005](#)
Croatian Society of Non-destructive Testing is organizing International Conference
-

Last updated: March 23rd, 2005.

Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr, CC to:
marina.bracun@fsb.hr

EFNDT Doc.No.: EFNDT/APLD/99-5 1(1)

WORKING GROUP ON ANTIPERSONNEL LANDMINES DETECTION

Agenda 1st Meeting of EFNDT WG - APLD

November 22nd, 1999, at the Center of Technology Transfer

I.Lučića 5, 10000 Zagreb, Croatia

09:00 - 09:30	<i>Registration</i>
09:30 - 10:00	<i>Welcome by WG 5 convenor</i> <i>Welcome by CrSNDT</i>
10:00 - 10:30	<i>Statutes (EFNDT / WG-APLD / 0999 / Doc.2)</i> <i>Report of WG 5 membership applications</i> <i>Verification of WG 5 membership status</i> <i>Establishing EFNDT/APLD WG 5</i>
10:30 - 11:30	<i>WG 5 Objectives and programme</i>
11:30 - 12:00	<i>Discussion</i>
12:00 - 13:00	<i>Break for refreshment</i>
13:00 - 15:00	<i>Presentation of member activities (EFNDT / WG-APLD / 0999 / Doc.1)</i>
15:00 - 16:00	<i>Planning future activities</i>
16:00 - 16:30	<i>Any other business</i>

Encl.:

[Hotel's list](#), [Venue map](#), [Zagreb city map](#),

Related Doc.:

EFNDT / WG-APLD / 0999 / Doc.1

EFNDT / WG-APLD / 0999 / Doc.2

EFNDT / WG-APLD / 0999 / Doc.3

EFNDT/APLD/99-1

EFNDT/APLD/99-2

WORKING GROUP ON ANTIPERSONNEL LANDMINES DETECTION

Agenda 1st Meeting of EFNDT WG - APLD
November 22nd, 1999, at the Center of Technology Transfer
I.Lučica 5, 10000 Zagreb, Croatia

- 09:00 - 09:30 *Registration*
- 09:30 - 10:00 *Welcome by WG 5 convenor*
Welcome by CrSNDT
- 10:00 - 10:30 *Statutes (EFNDT / WG-APLD / 0999 / Doc.2)*
Report of WG 5 membership applications
Verification of WG 5 membership status
Establishing EFNDT/APLD WG 5
- 10:30 - 11:30 *WG 5 Objectives and programme*
- 11:30 - 12:00 *Discussion*
- 12:00 - 13:00 *Break for refreshment*
- 13:00 - 15:00 *Presentation of member activities (EFNDT / WG-APLD / 0999 / Doc.1)*
- 15:00 - 16:00 *Planning future activities*
- 15:00 - 16:00 *Any other business*

Encl.:

Hotel's list & Venue plan

Related Doc.:

EFNDT / WG-APLD / 0999 / Doc.1

EFNDT / WG-APLD / 0999 / Doc.2

EFNDT / WG-APLD / 0999 / Doc.3

EFNDT/APLD/99-1

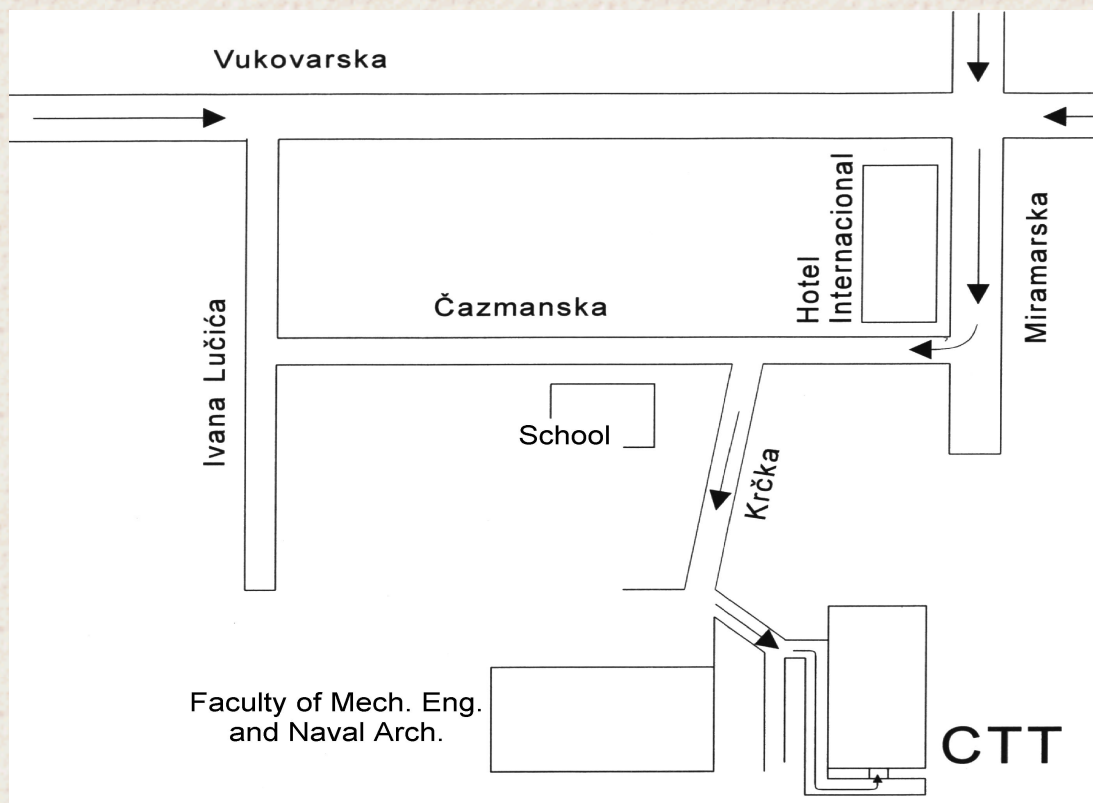
EFNDT/APLD/99-2

The First Meeting of EFNDT WG5

Working Group for Antipersonnel Landmine Detection

Plan of the CTT neighbourhood

Detailed plan of the CTT neighbourhood



Last updated: 27. October 1999.

Send questions, comments and suggestions to: jstepani@alpha1.fsb.hr

The First Meeting of EFNDT WG5

Working Group for Antipersonnel Landmine Detection

(WG-APLD)

 Basic information about some of Zagreb hotels

Hotel	Telephone	Telefax	Address	Cost of one night in single (double) room with breakfast
Dubrovnik	4873 555	4818 447	Gajeva 1	550 Kn (750 Kn)
Esplanade	4566 666	4577 907	Mihanoviæeva 1	960 Kn (1300 Kn)
Intercontinental	4553 411	4836 005	Krsnjavoga 1	1062 Kn (1382 Kn)
International	6108 800	6159 459	Miramarska c. 24	420 Kn (550 Kn)
Palace	481 4611	481 1358	Trg J. J. Strossmayera 10	777 Kn (994 Kn)
Sheraton	4553 535	4553 035	Kneza Borne 2	1450 Kn (1650 Kn)

The calling number for Croatia is 00385, and the Zagreb area calling number is 1.

 Currency

The approximately exchange ratio for the Croatian Kuna is

1 DEM approx. equals 3,9 Kn

Last updated: 27. October 1999.

Send questions, comments and suggestions to: jstepani@alpha1.fsb.hr

WORKING GROUP ON ANTIPERSONNEL LANDMINES DETECTION

Announcement to the 2nd meeting of EFNDT WG5-APLD

Rome, October 2000.

A majority of WG5-APLD members will participate to the [15th World Congress of NDT](#), to be held in Rome, October 15th-21th 2000.

During that event, the 2nd meeting of the WG5-APLD will take place. The interested parties will be provided with detailed information about the exact time and place of the meeting on the Information Desk of the 15th WCNDT.

Introduction

The [first meeting](#) of EFNDT WG5–APLD was held in Zagreb, on 22nd of November 1999.

The *Croatian Society of Non-destructive Testing* ([CrSNDT](#)) and *Centre of Technology Transfer* ([CTT](#)), Zagreb, hosted the meeting at its head office.

The WG5–APLD is acting on behalf of [EFNDT](#) and must refer to EFNDT *Board of Directors* for endorsement of its work and reports.

The confirmed list of WG5–APLD members is given [here](#).

Agenda

The agenda of the 2nd WG5-APLD meeting is the following:

- Accepting the Minutes of the 1st meeting, WG5-APLD Doc. No. 5,
- Objectives and working strategy of WG5-APLD,
- Membership report (membership applications and possible members presentations),
- International Conference on APLD, [MATEST 2001](#) – *NDT in Environment Protection at the beginning of the 21st century*,
- Future tasks - teams formation
 - Proposal for new NDT standardisation working groups,

- Preparing the advisory comments to the UN documents regarding the antipersonnel landmines detection,
- Initiating co-operation with related organisations as [ISO](#), [UN](#), [UNESCO](#), [IFRC](#), [WHO](#), [EC JRC](#),
- Other topics.

You are kindly invited to participate at the meeting.

WG5-APLD Convenor
Prof. Vjera Krstelj, Ph.D.

EFNDT WG5

Working Group 5 - for Antipersonnel Mine Detection

(WG 5 - APMD)

Official web page

General Information

EFNDT WG5 - APMD was established in March 1999. Since then, there were [seven meetings](#) held, each oriented toward a specific segment of mine detection process. Presently, the WG5 has 52 [members](#), from 16 countries. The convenor of the WG5 is Prof. Dr. Vjera Krstelj. The host group of WG5 is [Croatian Society for Non-destructive Testing](#).

News and forthcoming events

- Date and location of [8th WG5 meeting](#) are determined.

Last updates

- 08.10. Preliminary information about 8th Meeting announced,
- 04.10. Membership list updated,
- 02.10. The presentation of Dr. T. Apih included in the [Agenda](#) of the 7th WG5 Meeting

Topics about WG 5 - APMD:

- WG5 - APMD [Program](#)
- [Membership list](#) (status on 2002-03-04)
- [Questionnaire / Membership Form](#)
- [1st Meeting](#), and the [Minutes](#) of the 1st Meeting
- [2nd Meeting](#), and the [Minutes](#) of the 2nd Meeting
- [3rd Meeting](#), and the [Minutes](#) of the 3rd Meeting
- [4th Meeting](#), and the [Minutes](#) of the 4th Meeting
- [5th Meeting](#), and the [Minutes](#) of the 5th Meeting
- [6th Meeting](#), and the [Minutes](#) of the 6th Meeting

- [7th Meeting](#), and the [Minutes](#) of the 7th Meeting
 - Useful [Links](#)
-

This web site is official web site of EFNDT WG5 - APMD.

Last updated: 08. October 2002,

Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr

EFNDT WG5-APLD/0201/Doc13

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WORKING GROUP ON ANTIPERSONNEL LANDMINES DETECTION

International Workshop

STATE-OF-THE-ART IN LANDMINES DETECTION

April 5th - 6th, 2001

National Park "Plitvicka Jezera"

Thursday, 5th April 2001

10:00 - 10:30	<i>Registration</i> <i>Welcome by WG 5 Convenor</i> <i>Welcome by CrSNDT</i>
10:30 - 11:30	Session 1: DEVELOPMENT REQUIRED IN HUMANITARIAN DEMINING • <i>V. Krstelj - Quality Management in Humanitarian Demining</i> • <i>J. Dean - Antipersonnel Landmines Detection R&D Programme of European Commision Joint Research Center in Ispra, Italy</i> • <i>N. Pavkovic - Croatian Mine Action Center Objectives, Structure and Activities</i> • <i>N. Pavkovic - Humanitarian Demining Projects</i>
11:30 - 11:45	<i>Break</i>
11:45 - 12:30	Session 2: LANDMINES - RELEVANT DATA FROM THE FIELD • <i>D. Antonic - Technical Characteristics of Antipersonnel Landmines</i> • <i>V. Bauer - Specially Trained Dogs in Landmines Detection</i> • <i>F. Fucsok - Probability of Detection</i>
12:30 - 13:30	<i>Break for Lunch</i>
13:30 - 17:00	<i>Touring National Park "Plitvicka Jezera"</i>

17:00 - 17:45	Session 3: DEVELOPMENT OF LANDMINES DETECTION • <i>N. Gucunski - Spectral analysis of Surface waves and Related Methods</i> • <i>P. Pregowski, W. Swiderski - Infrared Images in Landmines Detection - Specificity, State and Challenges</i> • <i>M. Maucec, R. J. de Meijer, J. Rant, M. Ravnik - Simulations of nuclear processes for Landmines Detection</i>
17:45 - 18:15	<i>Participants' presentations</i>
18:15 - 19:30	3rd Meeting of EFNDT WG5 - APMD - Agenda

Friday, 6th April 2001

09:00	<i>Departure to the field</i>
11:00 - 12:30	Session 4B: DEMONSTRATION IN THE FIELD <i>Demonstration will be conducted in the vicinity of realistic mine field, with all required safety measures.</i>
12:30 - 13:00	<i>Workshop conclusions</i>

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EFNDT Doc.No.: EFNDT/WG5-APMD/1000/Doc14

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WORKING GROUP ON ANTIPERSONNEL LANDMINES DETECTION

Announcement to the 3rd meeting of EFNDT WG5-APLD

National Park "Plitvicka Jezera", April 2001.

During the [International Workshop Landmines Detection - State-of-the-art](#), the 3rd meeting of the WG5-APMD will take place. The interested parties will be provided with detailed information about the exact time and place of the meeting during Registration for the Workshop.

Introduction

The [first meeting](#) of EFNDT WG5-APMD was held in Zagreb, on 22nd of November 1999. The [second meeting](#) of EFNDT WG5-APMD was held in Rome, on 17th of October 2000. The WG5-APMD is acting on behalf of [EFNDT](#) and must refer to EFNDT *Board of Directors* for endorsement of its work and reports. The confirmed list of WG5-APMD members is given [here](#).

Agenda

The agenda of the 3rd WG5-APMD meeting is the following:

- Accepting the Minutes of the 2nd meeting, WG5-APMD Doc. No. 11,
- Objectives and working strategy of EFNDT WG5-APMD,
- Members presentations,
- International Conference on APMD, [MATEST 2001](#) - *NDT in Environment Protection at the beginning of the 21st century*,
- WG5 internal topic
- Future tasks

- standardisation
- WG5 internal topic
- Other topics.

You are kindly invited to participate at the meeting.

WG5-APMD Convenor
Prof. Vjera Krstelj, Ph.D.

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The Fifth Meeting of EFNDT WG5

Working Group for Antipersonnel Mine Detection

(WG5 - APMD)

 Basic information about some of Zagreb hotels

Hotel	Telephone	Telefax	Address	Cost of one night in single (double) room with breakfast	Web page
Dubrovnik	4873 555	4818 447	Gajeva 1	500, 600, 700 Kn* (980 Kn)	
Esplanade	4566 666	4577 907	Mihanoviæeva 1	1047 Kn (1390 Kn)	http://www.esplanade.tel.hr/esplanade
Opera	4892 000	4892 001	Krsnjavoga 1	1062 Kn (1382 Kn)	http://www.interconti.com/croatia/zagreb/hotel_zagic.html
International	6108 800	6159 459	Miramarska c. 24	430 Kn (570 Kn)	http://www.hotel-international.hr
Palace	481 4611	481 1357	Trg J. J. Strossmayera 10	657 Kn (864 Kn)	
Sheraton	4553 535	4553 035	Kneza Borne 2	1350 Kn (1490 Kn)	

*depending on how large the room is

From Center of Technology Transfer it is needed to walk about

5 minutes to hotel *International*,15 minutes to hotel *Esplanade*,20 minutes to hotels *Palace* and *Dubrovnik*, and30 minutes to hotel *Opera*.

The calling number for Croatia is +385, and the Zagreb area calling number is 1.

More detail about hotels can be found [here](#).

Currency

The approximate exchange ratio for the Croatian Kuna is

1 EUR approx. equals 7,3 Kn

Last updated: 1. October 2002.

Send questions, comments and suggestions to: [Josip Stepanic](#)

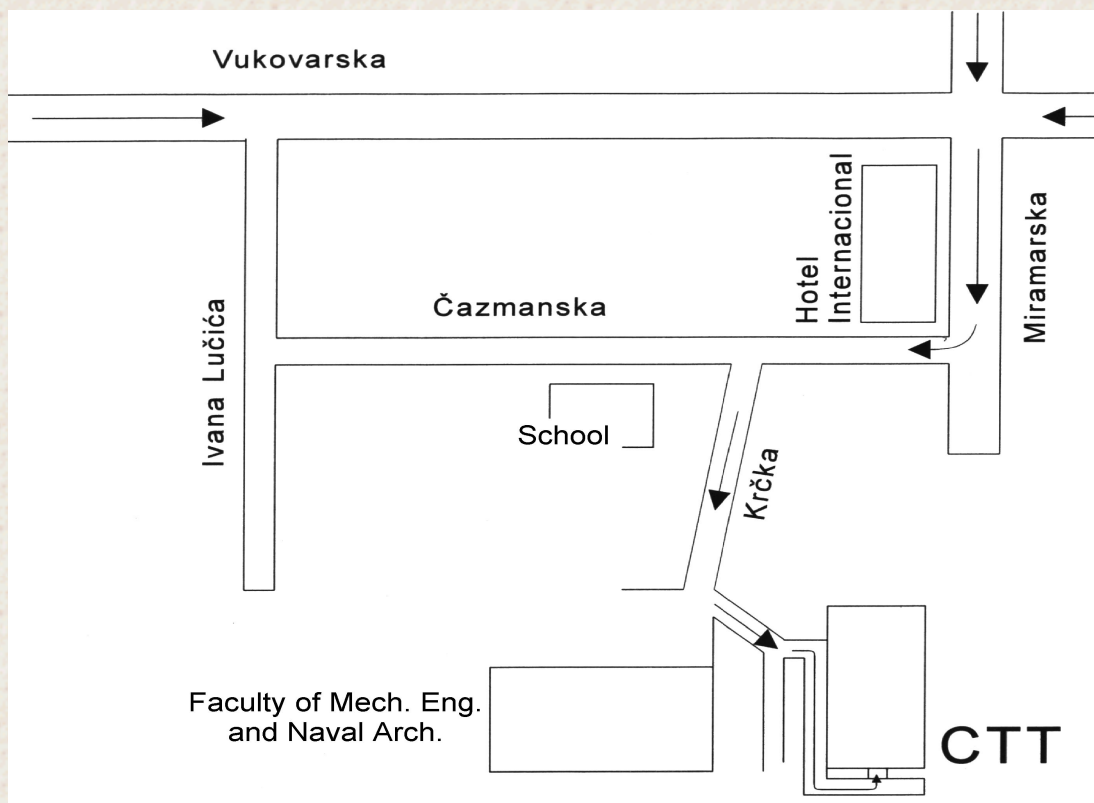
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The Meeting of EFNDT WG5

Working Group for Antipersonnel Mine Detection

Plan of the CTT neighbourhood

Detailed plan of the CTT neighbourhood



Last updated: 12. February 2002

Send questions, comments and suggestions to: [Josip Stepanic.](#)

EFNDT Doc.No.: EFNDT/WG5-APMD/0209/Doc27

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WORKING GROUP FOR ANTIPERSONNEL MINES DETECTION

Announcement to the 7th meeting of EFNDT WG5 - APMD

Zagreb, October 7, 2002

Introduction

On the [starting web page](#) of WG5 you may find links to the pages about the six previously held WG5 meetings.

The WG5-APLD is acting on behalf of [EFNDT](#) and must refer to EFNDT *Board of Directors* for endorsement of its work and reports.

The confirmed list of WG5-APMD members is given [here](#).

Agenda

The agenda of the 7th WG5-APMD meeting is the following:

- Introductory part:
 - Opening of meeting,
 - Roll call of participants,
 - Review of the agenda objectives (written at the end of this document)
 - Adoption of the agenda and its objectives,
- Discussion:
 - Accepting the [Minutes](#) of the 6th WG5 Meeting,
 - Information from the convenor - status of the project *Mine Action Academy*,
 - Application of the *Mine Action Academy* for the LIFE programme,
 - Collect feedback from the members and confirm buy in,
 - Presentation by Dr. Kurt Osterloh: *Technologies and Recent Developments to Inspect Suspicious Objects*,

- Presentation by Dr. Tomaz Apih: *NQR Demining*, project within the NATO Science for Peace program,
- Information about activities, members presentations,
- Date and place for the 8th WG5 - APMD meeting,
- Any other business.

The agenda **objectives**:

- Review, collect and adopt the *Mine Action Academy* project proposal,
- Identify interested and included parties.

Please review the proposed agenda and objectives and do not hesitate to contact us with your comments and additional information requests.

We are looking forward to seeing you.

Kind regards

WG5-APMD Convenor
Prof. Vjera Krstelj, Ph.D.

Last updated: September 24, 2002

Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr

8th EFNDT WG5 - APMD Meeting

Hotel Neptun - Istra, National Park Brijuni Islands, September 30, 2003

Dear members of WG5,

I hereby have the pleasure to invite you to the 8th meeting of EFNDT WG5 – APMD, which will take place at *Hotel Neptun - Istra* in National Park Brijuni Islands, on Tuesday, September 30, during the International Conference MATEST 2003. The time of the Meeting will be announced at the conference desk.

Draft Agenda:

1. Opening of meeting,
2. Roll call of participants,
3. Adoption of the agenda,
4. Accepting the Minutes of the 7th WG5 Meeting,
5. Information from the convenor,
6. Information about activities, members presentations,
7. Mine Action Academy – status of the project,
8. Date and place for the 9th WG5 - APMD meeting,
9. Any other business.

Estimated Meeting duration is 1 h.

With kind regards

Convenor of WG5 - APMD

Prof.dr.Vjera Krstelj

Zagreb, September 30. 2003.

Dear Dr. Osterloh,

I have a privilege to inform you as the Convenor of the EFNDT WG5 – APMD and in my personal name, that the members of EFNDT WG5 – APMD, during the 8th Meeting of WG5, unanimously agreed to elect you as the Deputy of the WG5 Convenor.

The decision followed the Proposal of the Convenor, which was a natural consequence of your constant and intense efforts in developing antipersonnel mine detection, as well as in other topics related to EFNDT WG5 – APMD, since the very beginning of the WG5 activities.

The decision is officially stated in the Minutes of the 8th Meeting, is publicly announced on the WG5 official web pages, and is legitimate since the 30 September 2003, the date of the 8th Meeting.

With kind regards

Convenor of WG5 - APMD

Prof. Vjera Krstelj, Ph.D.

9th EFNDT WG5 - APMD Meeting

Hotel Dubrovnik, Zagreb, October 16, 2004

Dear members of WG5,

I hereby have the pleasure to invite you to the 9th meeting of EFNDT WG5 – APMD, which will take place at *Hotel Dubrovnik* in Zagreb, during the International Conference MATEST 2004. The time of the Meeting will be announced at the conference desk.

Draft Agenda:

1. Opening of meeting,
2. Roll call of participants,
3. Adoption of the agenda,
4. Accepting the Minutes of the 8th WG5 Meeting,
5. Information from the convenor,
6. Acceptance of the Minutes of the WG5 *Ad hoc* meeting held during 16th WCNDT,
7. Information about activities, members presentations,
8. Proposal: scope extension of WG5,
9. Mine Action Academy – status of the project,
10. Date and place for the 10th WG5 - APMD meeting,
11. Any other business.

Estimated Meeting duration is 1 h.

With kind regards

Convenor of WG5 - APMD

Prof.dr.Vjera Krstelj

10th EFNDT WG5 Meeting

**Grand Hotel 4 *opatijska cvijeta*, Opatija - Croatia,
7 October, 2005**

Dear members of WG5,

I hereby have the pleasure to invite you to the 10th meeting of EFNDT WG5, which will take place at Grand Hotel 4 *Opatijska cvijeta* at the Adriatic coast, in city Opatija in Croatia, during the International Conference MATEST 2005. The time of the Meeting will be Oct. 7 at 17:30.

Draft Agenda:

1. Opening of meeting,
2. Roll call of participants,
3. Adoption of the agenda,
4. Accepting the Minutes of the 9th WG5 Meeting,
5. Information from the convenor,
6. Information about activities, members presentations,
7. Accepting the scope extension and the name of WG5,
8. Priority: preparation of the section *Humanitarian safety* at 9th ECNDT - Berlin,
9. Date and place for the 11th WG5 meeting,
10. Any other business.

Estimated Meeting duration is 2 h.

With kind regards

Convenor of WG5

Prof.dr.Vjera Krstelj

**EFNDT WG5 – PSSndtT
11th Meeting & Workshop**

Dear members of WG5,

I hereby have the pleasure to invite you to the joint event: the 11th meeting of EFNDT WG5 – PSSndtT (Public Security and Safety NDT Technology) and Workshop, the second part of the meeting, which will take place 3-4 April, 2006.

11TH MEETING

The Meeting will take place in *Centre of Technology Transfer* – Zagreb, Croatia, I. Lučića 5, on 3 April, 2006, with start at 10:00 am.

Draft Agenda:

1. Opening of meeting,
2. Roll call of participants,
3. Adoption of the agenda,
4. Accepting the Minutes of the 10th WG5 Meeting,
5. Information from the convenor,
6. Information about activities, members presentations,
7. Regional networking on PSSndtT,
8. Date and place for the 12th WG5 – PSSndtT meeting,
9. Any other business.

Estimated Meeting duration is until 5 pm including brakes (coffee&brunch as refreshments).

WORKSHOP

The Workshop focus are objectives and requirements of applying and developing the NDT technologies for public security and safety. Workshop will be held on 4 April, 2006, with duration 10:00-14:00. Location of the Workshop is the Mine Action Academy, Zagrebačka 3, Velika Gorica, close to Zagreb airport. The transfer of participants between Centre of Technology Transfer and Mine Action Academy will be organised.

With kind regards

Convenor of WG5 – PSSndtT

Prof.dr.Vjera Krstelj

EFNDT WG5 – PSSndtT
Programme of the 11th Meeting (2nd day)

WORKSHOP

Preliminary version

Date and place: 4th April 2006 in Mine Action Academy, Zagrebačka 3, Velika Gorica

- | | |
|---------------|--|
| 10:00 – 10:20 | Welcome with Presentation of <i>Polytechnic Velika Gorica</i>
Ivan Toth, Dean, Polytechnics Velika Gorica |
| 10:20 – 10:40 | Key Notes about PSSnstT
Vjera Krstelj, WG5 convenor |
| 10:40 – 11:00 | WG5 Extended Scope – Extended Demand, How to Meet This Challenge
Kurt Osterloh, WG5 deputy convenor, BAM – Berlin |
| 11:00 – 11:20 | Crisis Management Study and Influence on Studies on Mine Action Academy
Žarko Dobranović, Polytechnics Velika Gorica |
| 11:20 – 11:50 | Break |
| 11:50 – 12:10 | Research, Development and Training in Mine Action
Nikola Pavković, CroMAC |
| 12:10 – 12:30 | Terroristic Threats to Civilians
Robert Kralj, Polytechnics Velika Gorica |
| 12:30 – 12:50 | State-of-the-art-in Humanitarian Demining
Tomislav Ban and Davor Laura, CroMAC |
| 12:50 – 13:10 | <i>title to be determined</i>
Mate Gaal, BAM – Berlin |
| 13:10 – 14:00 | Discussion and concluding remarks |

EFNDT WG5

Working Group 5 - for Antipersonnel Landmine Detection

(WG 5 - APLD)

Important notes about 3rd WG 5 - APLD meeting:

- [International Workshop, APLD State-of-the-Art](#), to be held in National Park Plitvice, Croatia, April 5 and 6, 2001.

[Workshop program](#) **UPDATE** 27 Mar 2001 - [3rd WG5 Meeting Agenda](#).

Topics about WG 5 - APLD:

- WG-APLD [Program](#)
 - [Membership list](#) (status on 2001-03-20)
 - [Questionnaire / Membership Form](#)

 - [1st Meeting](#), and the [Minutes](#) of the 1st Meeting
 - [2nd Meeting](#), and the [Minutes](#) of the 2nd Meeting
 - [3rd Meeting](#), and the [Minutes](#) of the 3rd Meeting

 - Useful [Links](#)
-

This web site is official version of EFNDT WG 5 - APLD.

Last updated: June 12th 2001

Send questions, comments and suggestions to: josip.j.stepanic@fsb.hr

International Workshop on State-of-the-art in Antipersonnel Landmines Detection

National Park "Plitvicka Jezera", April 5th - 6th 2001

Registration Form

- Name and Surname:
 - Title:
 - Institution:
 - Department:
 - Address (Street or P.O. Box, City, Country):
 - *Member of which NDT Society:*
 - Phone:
 - Fax:
 - E-mail:
 - Field of Your interest related to APLD:
 - For Your comments and suggestions:
-

Send questions, comments and suggestions to: [Organising Committee](#).

Last updated: January 31th 2001