

NEWSLETTER

May 2011



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Dear EFEE members

Words from and introduction of the president.

The last EFEE Council Meeting and Annual General Meeting were held on 7th of May in Kiev, Ukraine. Eleven delegates were represented and a special thanks to our host Nikolai Ischenko and USIV for arranging the meeting and inviting all to an excellent dinner and song performance. At the meeting we welcomed Jari Honkanen who has replaced Pentti Sainio as delegate and contact person for Finland. The Finnish National Member association has changed from Central Association of Earth Moving Contractors in Finland (SML) to Infra Contractors' Association (Infra).

Prior to the Council and Annual General Meeting there were meetings in the different Standing Committees. One of the main topics for the general assembly was to vote and adopt the new Articles of Association and Bylaws. The Committee for Constitution and Bylaws made some minor changes which were agreed in the Council for final voting in the AGM meeting. All members in AGM were in agreement and voted for the new Articles and Bylaws. The AGM gave the Committee Chairman Aslak Ravlo a special thanks for preparing this material so a final document could be established.

In the Shotfirer Committee there were big discussion how to manage to get this good training document translated to more countries and hopefully publish it as an EU standard for education in the future. The Material will be disclosed to members when all working packages are done. EFEE will seek funds to translate the developed teaching means material. An application to LdV regarding translations will be sent in February –March 2012. If approved, a 2 year program will start in 2013. The Committee is looking for a person who is willing to be a Project Leader. Karl Kure asked the Council members to come up with proposals regarding applications.

The EU.directives Committee announced that the implementation of the track and traceability directive “EU Directive 2008/43” has that been postponed with three years to April 2015 for end-users and to April 2012 for producers mainly thanks to an official letter from EFEE sent to the EU commission in October 2010.

The Election Committee proposed that the Board should be re-elected to get the continuity. The Election Committee also proposed Heinz Berger to act as a deputy Treasurer. The proposal from the Election Committee was unanimously agreed to at the Council meeting and manifested at the AGM meeting.



The re-elected board May 2011, Kiev Ukraine. From the left; Johan Finsteen Gjødvad, Denmark; Jose Gois (Past President), Portugal; Jörg Rennert(Vice-president), Germany; Donald Jonson(President); Alexander Efremovtsev, Russia.

Since New Year 2011 EFEE got three new individual members and at the Council meeting EFEE approved TITANOBEL as a new EFEE Company member. We very much welcome those new members for joining EFEE and strengthen our association.

As most of our workload through Committees and Board meetings mainly is based on idealistic forms we welcome all new members supporting the association with their membership fees.

Another very important contribution to our work is the Conferences and the next one will be in the beautiful city Lisbon in Portugal.

The preparation for the 6th EFEE World Conference in Lisbon is progressing and so far more than 57 abstracts have been submitted and there has been a fantastic response of exhibitors and sponsors. So it looks like Lisbon in September for sure is the right place to be.

The Council also decided the winners for the Student Award to two students. One from Russia and one from Portugal. They will be honoured to have their presentations at the Conference and to get

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free registration fees and accommodations. Congratulation to the winners Ana Rita Farinha for her ABSTRACT: Explosive Densification of Metal Powders and Viktor Zhulickov for his ABSTRACT: Mathematic Model and Software for the Bench Blasting.

Finally the Council asked all Member Nations to come to next meeting in Lisbon, with their National Vibration standards preferably summarized in English, where a new Committee “Environmental Committee” will be formed.

More details from the various Working Committees among other things can be read in this newsletter.

Next Council meeting will be held on 17th of September in Lisbon just before the Conference.

Donald Jonson, President of EFEE.

The EFEE-Newsletter

This issue includes information about:

- An introduction to the 6th EFEE World Conference, in Lisbon Portugal September 2011.
- An experience article on steep blasting.
- A proposed solution on how to handle the Tracking and Tracing challenge “*EU Directive 2008/43*”.
- Notifications about the upcoming events in the world of explosives.

Attached is the 2nd circular for EFEE 6th World Conference on Explosives & Blasting, in Lisbon 18th-20th of September 2011.

We in EFEE hope you will enjoy the present EFEE-Newsletter. The next edition will be published in August 2011, prior to the conference. Please feel free to contact the EFEE secretariat:

- If you have a story you want to bring in the newsletter.
- If you have a future event for the next EFEE-newsletter upcoming events list.
- If you want to advertise in a future newsletter.
- Or any other matter.

Johan Finsteen Gjødvad, Chairman of the Newsletter committee and member of the board

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The 6th EFEE World Conference on Explosives and Blasting

18th -20th September 2011, Lisbon Portugal

More than 500 professionals from over 50 different countries from the construction, demolition, quarrying and mining industry are expected at Corinthia Hotel in Lisbon September 2011 where they will attend the 6th EFEE Conference. The latest techniques, products and developments covering the art of successful Blasting will be presented in convenient auditoriums and exhibition areas.

Schedule

The Schedule of Events starts on Sunday with the Registration and a Workshop. Monday and Tuesday will be for Technical sessions and Exhibition.

Sunday, 18 September	12:00-18:00	Conference registration
	14:00-17:00	Workshops on:
		<ul style="list-style-type: none">New EU Directives 2008/43 and a system for the identification and traceability of explosives for civil usesHow to handle and solve vibration, noise disturbances in urban tunnelling projects
	18:00-19:30	Welcome drinks reception & opening speeches
Monday, 19 September	8:30-17:00	Technical sessions & Exhibition
	19:30-	Gala dinner
Tuesday, 20 September	8:30-17:00	Technical sessions & Exhibition
	17:00	Conference close

Papers

42 papers covering 6 technical areas were selected for presentation and for the first time the EFEE conference includes two papers selected from a Student Competition. The full list of papers is as follows:

EU Directives and Harmonisation

- Status of New EU-Directives
- EUExNet – A European explosives network
- Authorized rock blaster- the project that revolutionizes the rock blasting industry

Health, Safety and the Environment

- Soft Computing Approach to Evaluate and Predict Blast-Induced Ground Vibration
- Test blasts and vibration prediction, AVM project Klinthagen Quarry, Gotland, Sweden
- Research on the Safety Criteria of Blasting Vibration
- Good Practice Guide for the Safe Storage of Solid Technical Grade Ammonium Nitrate
- ECOFRO- Eco-COMparator for Fragmentation of Rock methods
- Blasting for Environmental Remediation
- Environmentally conscious blasting: Beyond Mine to Mill

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- A multi-parameter blast planning and vibration monitoring program for the construction of three tunnels at Tembi – Platamon area, on the Motorway Athens – Salonica, Hellas
 - Improvement safety in the transport of explosives in Portugal using geolocation technology
 - Security of explosives on site, remaining explosives, cartridges and detonators failed and missed
 - Life Cycle Assessment of a civil emulsion explosive.

Technical Development

- Integration and optimisation of blasting and combination processes – case studies
- A Probabilistic Analysis of Measured Levels of Blast Vibration.
- Detonation Temperature Calculation of Water-Gel Explosives
- Blasting Vibration Waveform Prediction Method based on Superposition Principle
- Multiple seed blast vibration modelling for tunnel blasting in urban environments
- Development and study of low sensitive and ecologically clean coarsely dispersed explosive
- Reaction of Aluminum Particle in Detonation of Emulsion Explosive
- Development of Electric Discharge Impulse Crushing System
- Non-electric Detonator with Electronic Delay
- Fragmentation: size distribution or distribution of distributions?
- In situ measurements of detonation pressure and temperature of commercial explosives
- The Importance of Sonicity in Blasting

Shot Hole Development

- Managing near field vibrations at the new Central Station for the Citybanan in Stockholm
- Effect of sympathetic pressure on energy release characteristic of explosives
- Geomechanical control of jointed rock mass blasting by aligned drilling

Blasting Covering Experiences from Projects

- The synergy of techniques as a new approach to the work out of complex demolition interventions
- Full-scale single and multiple-hole blasting experiments in sandstone
- Utilisation of the seismic measurement in projecting of covering blasting at Slovakia.
- Vibrations and Concrete Behaviour
- Evaluation method of the effects of seismic blasting in Maglovec quarry
- Vibration velocities resulting from the use of explosives in different rock masses
- Modification of rock fragmentation Sungun Copper Mine using of modification blastholes patterns
- Case studies on underground and tunnelling applications using electronic initiation
- Advanced techniques for high vibration reductions
- Blasting 60-meters Underwater in an Environmentally Challenging Environment
- Vibration Signals in Rock and Paste Backfill in an Underground Blasting Operation

Clearance & Decontamination

- Explosive technologies in decontamination areas polluted by military activity

Management Covering Blast Design

- The influence of geology on blast design and explosive performance
- Rock mass characterisation for blast optimisation by impedance matching at a coal mine
- Improved blast results from the implementation of a business intelligence system

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Exhibition

In a great exhibition area 37 companies will present the latest products, equipment, accessories and technique. List of companies:

ORICA	Lubrizol	MAXAM
Kirilogu	NOMIS	Potters Europe
Valeron	Austin Powder	TREAD
	Instantel	
Tradestar	MREL	Pulsar Measuring Systems
DATUM	Sigicom	Nitroerg
MDL	Broda Packaging	Split Engineering
Poly Clip	Novosibirsk	Soft Blast
TBT - DNA Blast Software	Xiaojin	3G Software & Measurement
Nitromak	Vibraquipo	Poly Clip
Tipper Tie	Reserved	Experse
Expancel	Frans Vermee	White Industrial Seismology
	Rockmate	

Social program

During the Conference a program for participants and spouses is arranged, which include sightseeing around the Lisbon area. The beautiful city of Lisbon has a history with more than 800 years of cultural influence together with modern trends. A wide variety of parks, nature and street cafés combined with a pleasant climate makes it a perfect place for the EFEE Conference and the opportunity to meet old friends from all over the world for a couple of days.

Partner Programme Options:

Sunday 19th September	Half Day tour to the Old Lisbon
Monday 20th September	Half Day tour to Sintra Cabo da Roca/Cascais

A great chance to talk with suppliers, designers and manufactures is coming.

Take advantage of “early bird” registration discount, register before 30 June using one of the following methods:

Register today on-line at: www.efee.eu

For further information please email: efee@tylerevents.co.uk

José Gois, EFEE and James Tyler, Tyler events

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Germany's shortest tunnel blasting

Blasting experience

It was approximately 140 years old and the only tunnel on the railway line between Nuremberg and Regensburg in Bavaria, total length only 16 m. Because of danger of rock falls this rock gate had to be removed.

The double tracked electrified rail line is an important connection with ~ 9 000 passengers and 120 trains daily. After a positive feasibility study the fundamental parameters and the planning was executed. The rock nose laid in karst region. It was limestone with caverns and it had embankments up to 90°. The total mass to be blasted was 11 000 t.

The blast holes were between 2 and 15 m deep, the holes for pre splitting at the new embankment reached a depth of 30 m. The survey of this very complicated field was done with the systems "Pulsar 3D FastScanProfiler" and the software "Quarry6" and "QuarryDetonator" of the Geo-Konzept Company.

An Austrian drilling company with great experience drilled the hole in this extreme steep slope. The drill rigs – legged excavators with drill carriages – were secured by ropes. In total they drilled 2 900 m.



The 16 m rock tunnel



Preparation of protection against falling

1 755 kg of ammonia-gelatin dynamite (\varnothing 50 mm) were charged into 127 bore holes together with 942 m of 12 g detonating cord. The powder factor was 0.368 kg/m^3 . For the pre splitting blast 1 300 m of detonating cords with 100 g/m were set into 75 bore holes.

	non electric detonators	non electric delay elements	electric detonators*
mass blast	250	270	5
pre splitting	150	10	* one round of shots

For the whole operation the rail track could be closed for 16 days only. A big part of the preparations had to be worked during running traffic, e.g. drilling.

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Drilling at 60° decliend slope



The final result

At May 31st 2010 the blast was successfully initiated. The rock masses could be removed from the track in the scheduled time and the rail traffic restarted on precise time.

The general planning was mad by Geo-Plan, Dr. Spang GmbH, the blast design was Helmut Roller. The entrepreneur was Roller Blast Techniques GmbH & Co KG which was surveyed by the forensic expert Ulrich Mann.

Helmut Roller and Ulrich Mann
(shortened version by Walter Werner)

Tracking and Tracing for Explosives

Practical Implementation of the EU Directive 2008/43

The EU-Directive 2008/43 set up a new marking system for explosives for civil uses. In Future every article (cartridges, detonating cord, detonators also every packaging unit) must be marked with a unique identification. It shall comprise a human readable part and additionally electronic readable information (barcode or matrix code).

For manufacturers, distributors and users of explosives exists several obligations:

- Marking of the explosives and each smallest packaging unit by manufacturers and in case of repackaging also by distributors or blasters
- Keeping a record of all identifications of explosives
- Recording the location of each explosive
- Maintaining the data collected for 10 years
- Providing the authorities, upon request, with information about each article – also outside normal business hours (24 hours 7 days)

The Directive shall not apply to explosives transported and delivered unpackaged or in pump trucks for their direct unloading into the blast-hole, for explosives manufactured at the blasting sites, and that are loaded immediately after being produced (*in situ* production) and also for ammunitions.

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Originally the directive should come into force at 5th April 2012. The associations of manufacturers and users of explosives presented the EU Commission a lot of arguments for a postponement. Especially the European Federation of Explosives Engineers EFEE explained that actually most of the stock-books of users are hand-written and the electronic recording would be a huge challenge for workers in blasting and mining industry. Also the development of the computerized systems for the identification and traceability will take longer. Suitable standard software is actually not available on the market. Therefore the explosives industry and especially the users need additional time to fully develop and test an electronic system.

The European Commission submitted a draft for a postponement of the track and trace directive. Manufacturers shall mark the explosives from 5th April 2013. The obligations on data collection and record keeping (chapter 3 of the directive) shall come into force at 5th April 2015. The supply chain and the users of explosives therefore shall have additional three years to implement electronic tracking systems.

The Federation of European Explosives Manufacturers FEEM has set up a standard for the marking of explosives, based on a variable code structure and a data matrix code. It shall be used of European explosives industry for articles and also packaging units.

For the electronic data recording is required hardware like a hand scanner or a portable data capture unit (e.g. PDA). A hand scanner must be connected with a notebook or a personal computer – for quarries or construction sites not the most appropriate way.

Users and distributors of explosives must also have suitable software for data recording and collecting.

The directive 2008/43 requires:

- keeping a record of all identifications of explosives, together with all pertinent information including the type of explosive, the company or person to the custody of whom it was given
- recording the location of each explosive while the explosive is in their possession or custody until it is either transferred to another undertaking or used
- at regular interval testing their data collection system
- keeping and maintaining the data collected including the unique identifications for a period of ten years
- protecting the data collected against accidental or malicious damage or destruction
- providing the competent authorities, upon their request, with the information concerning the origin and location of each explosive during its life cycle and throughout the supply chain, also outside normal business hours.

The **German Blasting Association** – Deutscher Sprengverband e.V. – in cooperation with the European Federation of Explosives Engineers EFEE has started a project to develop software especially for end-users. The project shall be realized together with Dresden Informatik GmbH. The 1990 founded Dresden Informatik is an internationally active system house for application solutions in industry, trade and administration. The software **TTE** Tracking and Tracing of Explosives is based on a program for the German tobacco industry, which also must have a track and trace system for their products since several years.

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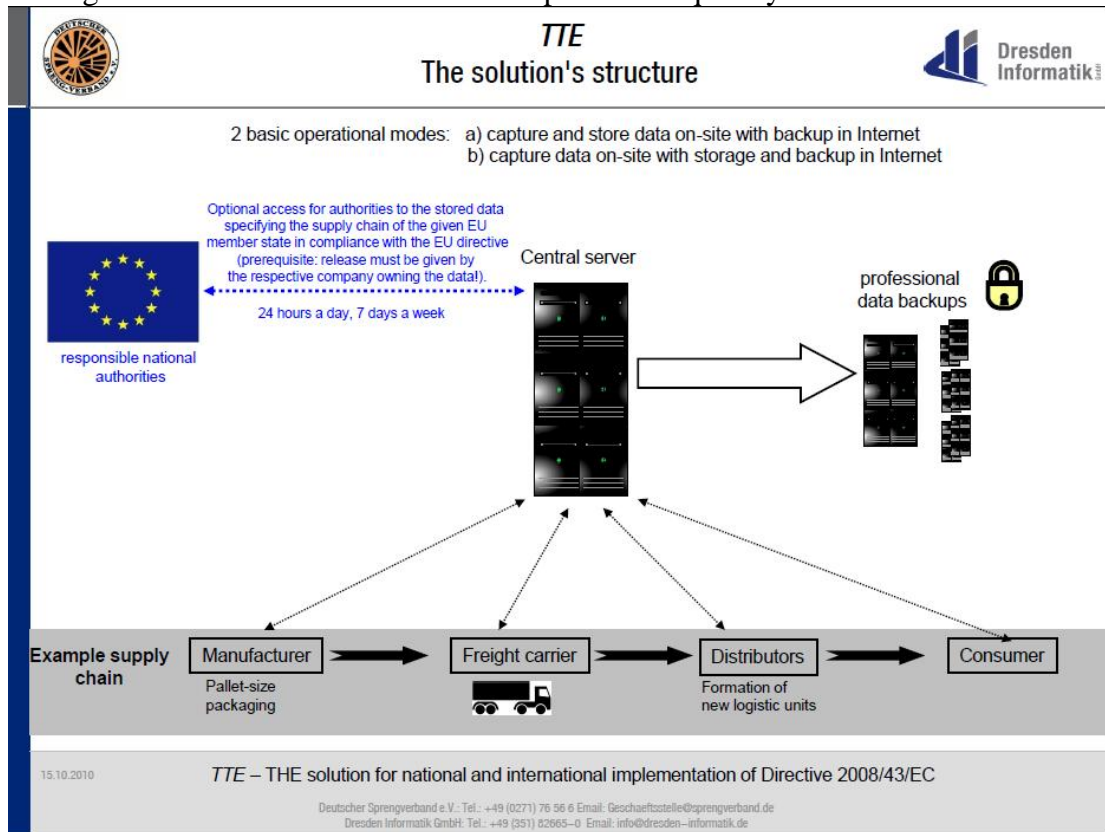
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The main advantages of the software *TTE* Tracking and Tracing of Explosives

- *TTE* fulfills of the requirements of directive 2008/43
- Easy, practice-oriented operation especially adapted for the target group: explosive engineers and blasters, but also for distributors and forwarders
- Data collection with barcode-readers usual in trade
- Data protection system: the data is stored and protected in distributed computer centers
- Possibility of an online access for information service around the clock
- *TTE* is multilingual and can be used in all EU countries
- the data transfer is encrypted and password protected
- all changes and deletions are stored as change history, post hoc modifications are only possible with documentation
- *TTE* has a modular structure for additional requirements of member states (e.g. documentation, inventory)
- Each company in the supply chain only has access to its own data and is therefore only responsible for its own data
- Changes to laws and directives can be implemented quickly



Further information can be found on the website of the European Federation of Explosives (www.efe.eu) Engineers and the German Blasting Association (www.sprengverband.de)

Jörg Rennert, EFEE and German Blasting Association Manfred Dax, German Blasting Association

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Blasting technology

- Basics of general field blasting technology and agricultural and forestry blasting
- Basics of tunnel and underground blasting
- Special courses for Blasting of building constructions
- Special courses for Large hole blasting
- Special courses for Blasting in hot materials
- Special courses for Ice blasting

Pyrotechnics for technical purposes

- Basic courses for handling pyrotechnic articles for technical purposes – except their production (airbag/belt pretensioner etc.)

Pyrotechnics for outdoor and indoor

- Basic courses for the use of pyrotechnic articles (outdoor fireworks)
- Basic courses for the handling pyrotechnic articles in theatres and comparable locations – except their production (stage fireworks, indoor fireworks)
- Special courses for handling explosives in TV- and movie productions- except their production (SFX Special Effect Course)

Explosive ordnance disposal (EOD)

- Basic courses for supervisor of Explosive Ordnance Disposal
- Special courses for ammunition of the former Warsaw Pact
- Special courses for world-wide demining
- Courses on detection of mines and unexploded ordnances for demining staff

Civil engineering/Building devices

- Basic course on demolition
- Course on gaining special knowledge on demolition, re-development and re-construction of cement-asbestos-products (TRGS 519)
- Course on preparation for dismantling contaminated old industrial buildings
- Course for safety and health coordinators on construction sites

Engineering Consultation

- Blasting Technology
- Pyrotechnics
- Explosive ordnance disposal (EOD)

Research and development

Blasting Technology



Pyrotechnics



Explosive ordnance disposal (EOD)



Civil engineering and consulting



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Building devices



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The art of successful blasting

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EFEE

Upcoming events

2011	May 21-22	World Tunnel Congress 2011, Helsinki, Finland	www.wtc11.org
	May 26-27	BLASTING TECHNIQUES 2011	Contact: blast.mine@stonline.sk
	June 19-25	11 th international Multidisciplinary Scientific Geo-Conference & Expo, Varna, Bulgaria	www.sgem.org
	July 18-21	XVth African Regional Conference on Soil Mechanics and Geotechnical Engineering, Maputo, Mozambique	amanhique@tec.co.mz
	Sep 11-16	22 nd World Mining Congress 2011, Istanbul Turkey	www.wmc-expo2011.com
	Sep. 18-20	6 th EFEE World Conference, Lisbon Portugal	www.efee.eu
	Oct 13-15	Third Indian Rock Conference, Roorkee, India.	singhfce@iitr.ernet.in
	Nov 8-9	Explo 2011, Blasting Controlled Productivity, Melbourne Australia	www.ausimm.com.au/explo2011
2012	Feb 2012	ISEE's 38 th Annual Conference on Explosives & Blasting Technique, Nashville, USA.	www.isee.org
	May 28-30	EUROC 2012, Stockholm, Sweden	www.isrm.net/conferencias/detalhes2.php?id=2974&show=conf

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