

XV INTERNATIONAL CONGRESS



XV International ISM Congress 2013

(International Society for Mine Surveying)

September 16 – 20

Eurogress Aachen

in conjunction with the
German Mine Surveyor Association
(Deutscher Markscheider-Verein e.V. – DMV)

Program & Information



Acknowledgement

On behalf of the organization team of ISM Germany 2013, I want to express a heart-felt thank you to all Sponsors and Exhibitors.

The success of our international Congress is seriously depending on your commitment and support. It was the vision of the ISM 2013 team to inform, entertain, and provide a networking forum for all ISM members and friends in a pleasant, comfortable environment. Your generous contribution helped to make our vision a reality.

Sincerely,

Norbert Benecke (DMV e.V.)
Sponsoring Representative ISM 2013

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Greeting address Garrelt Duin



North Rhine-Westphalia: We are industry. That's why I'm delighted that this major international congress is being held again here – in Germany's number 1 energy state – for the first time in 34 years. Fossil fuel power plants guarantee a secure supply of electricity for the foreseeable future. There is nowhere else in Germany where more energy is generated, converted and used to make high-quality products than in NRW. Domestic coal supplies electricity round the clock at affordable prices. We cannot therefore do without it.

Scientists and professionals share information and experience on questions and developments relating to mine surveying, mining and the raw materials industry. Industry sceptics see mining as on a path of terminal decline. And yet it still has great economic importance. German mining technology has a top-class reputation worldwide – both in mining and its downstream segments. That does not preclude Germany also occupying a leading position in renewable energies. Mining also has an impact on the environment, be it on houses, roads, receiving bodies of water or the groundwater level. One of the key competences of the mine surveyor is to forecast, assess and document the causes and effects of mining.

The mine surveyor is an acknowledged expert who ensures that the impact on the surface is minimized – in relation to coal, as well as natural resources not used to generate energy, such as ores, salts, stones and earth. The modern profession of a mine surveyor demands expertise in abandoned mine workings, geoinformatics, geotechnology, surveying engineering, satellite geodesy and environmental planning and technology.

Excellent scientific education at universities, especially the RWTH Aachen University of Applied Sciences, and practical training at the mining authorities means that our mine surveyors are in great demand outside Germany as well.

This congress helps put the profession of mine surveyor in the public eye. That strengthens mine surveyors as indispensable experts in mining and related sectors and makes the profession attractive to young talents. As the patron of this congress, I wish it every success.

Garrelt Duin

Minister of Economic Affairs, Energy, Industry and Handicraft, NRW
Patron ISM 2013



Greeting address Axel Preusse

Since more than 35 years, the International Society for Mine Surveying (ISM) hosts international congresses in a 3-year cycle. These congresses address the wide-ranging topics of mine surveying and related topics of the mining and resources sector. Organizers of the XV ISM Congress are the International Society for Mine Surveying as well as the German Mine Surveyor Association (Deutscher Markscheider-Verein e.V. – DMV) and the Institute for Mine Surveying, Mining Subsidence Engineering and Geophysics in Mining (IfM) at RWTH Aachen University. The Minister of Economic Affairs of North Rhine-Westphalia, Mr. Garrelt Duin, has taken the patronage of the congress.

The attractive, professional quality program comprises more than 140 lectures, an extensive poster exhibition and nearly 30 specialized exhibitors. Important issue is the securing of young academics in the 35 member countries of the ISM. Due to globalization, international academic education centers continue to merge.

My sincere thanks to all those who have contributed in establishing the congress: the authors, speakers and moderators, the members of the organizing team, the companies that have supported the congress through sponsorship and the members of the Scientific Advisory Board.

We look forward to welcoming you as a participant, sponsor or exhibitor!

Prof. Dr. Axel Preusse

ISM President



Greeting address Carsten Wedekind

After 34 years Germany is playing host to the international mine surveyor conference for the second time. The meeting will be conducted together with our as from 2009 implemented national session „energy and resources“.

Today mining has decreasing importance as compared with the time 34 years ago, but in the long run there will be a production of raw materials in any case. The general conditions have changed and circumstances will also change in the future. But in honour of this occasion the contemporaneous exchange of information is of significance. What can we learn from other mining areas around the world und which kind of information others are able to get from our point of view? Practicians, scientists, students and managing directors out of mining, administration, universities and research facilities will have discussions on current national and international issues. The wide range of topics of the presented contributions reflect this fact.

I want to give thanks to professor Axel Preuße and his team who give strong support to organize this conference during the last two years.

I would like to wish an exciting and educational convention to all parties concerned.

Carsten Wedekind

Chairman of the German mine surveyor society
(Deutscher Markscheider-Verein e.V.)

Important Information

Congress Venue and Office

Eurogress Aachen

Monheimsallee 48

D-52062 Aachen

Fon: +49 (0)241 91 31 540

Email: ism2013@gdmb.de

Congress Office opening hours:

Monday, 16 September 2013 9:30-18:00

Tuesday, 17 September 2013 7:00-18:00

Wednesday, 18 September 2013 8:00-18:00

Thursday, 19 September 2013 8:00-13:00

Evening Events

Monday, 16 September 2013, 19:00

Restaurant Flowers, Pontstraße 141-149

Fon: +49 (0)241 9 12 64 807

Tuesday, 17 September 2013, 19:00

Krönungssaal im Aachener Rathaus, Markt

Fon: +49 (0)241 43 27 310

Wednesday, 18 September 2013, 19:00

Schloß Rahe, Schloß-Rahe-Straße 15

Fon: +49 (0)241 93 67-0

Thursday, 19 September 2013, 19:00

Hotel Pullman Aachen Quellenhof, Monheimsallee 52

Fon: +49 (0)241 91 32-0

Mailing address Congress Office

RWTH Aachen

Institut für Markscheidewesen, Bergschadenkunde
und Geophysik im Bergbau (IfM)

Wüllnerstraße 2

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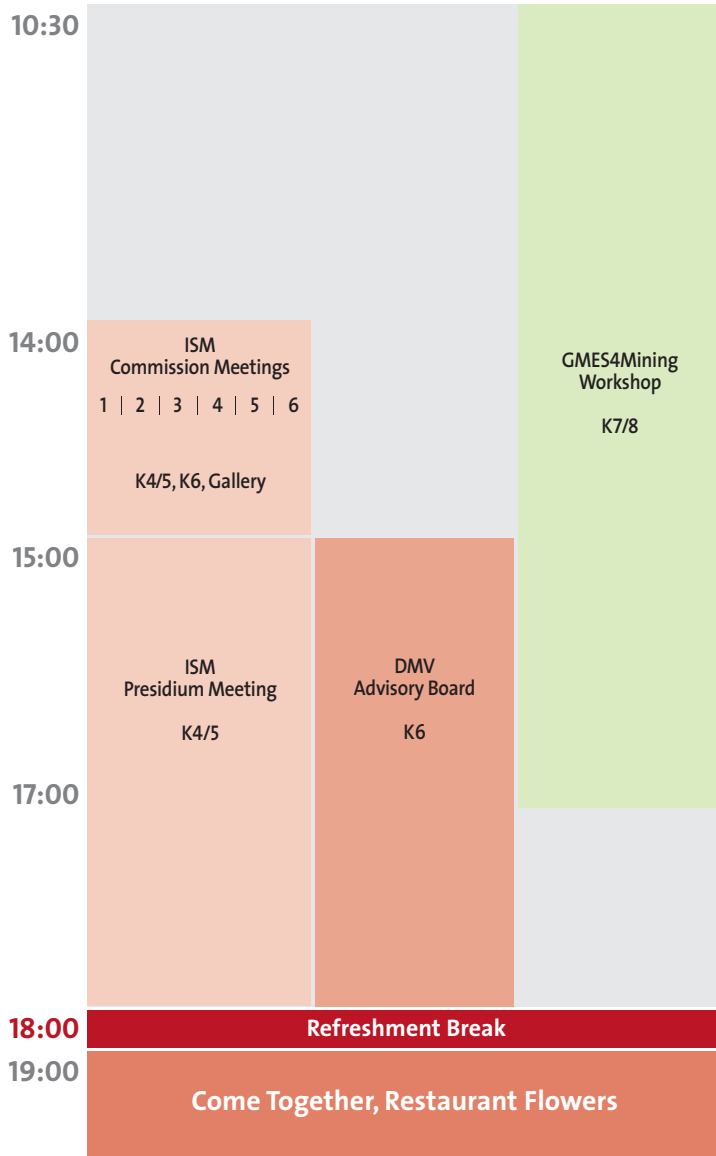
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Daily Overview

Monday, 16 September 2013



Cultural Program

C1

Tour of the old town of Aachen inclusive town hall

The historic old town of Aachen invites to go for a stroll. Let yourself be guided through narrow alleys and across historic squares through the almost 2000 year-old history of Aachen. Experience all facets of Aachen, a modern city with beautiful historic town houses, many old and new fountains, and innumerable stories all about the Cathedral and the town hall.

- ▶ 2 hour guided tour in Aachen
- ▶ Meeting Point: 14:45 in front of Eurogress or individual 15:00 Aachen City Hall, Markt
- ▶ English guides

Social Program

S1

Come Together

The „Flowers Bar“ in Aachen is a unique place for a first meeting of congress participants in an relaxed lounge atmosphere.

- ▶ Meeting Point: 19:00, Restaurant Flowers, Pontstrasse 141-149

Daily Overview

Tuesday, 17 September 2013

	Europasaal	K4/5	K7/8	K6	Foyer/Gallery
9:00	<p>Opening Session Europasaal</p> <p>Welcome addresses: A. Preusse, ISM President, RWTH Aachen; M. Geßner, Ministry of Economic Affairs, Energy, Industry and Handicraft of the State of North Rhine-Westphalia; J.-J. Rupp, Vice President VRB</p> <p>Greeting addresses: E. M. Schmachtenberg, Rector RWTH Aachen; U. Stichling, President DDG; J. Riecken, Vice President DVW; G. Mayer, BVÖ; T. Neu, Presidium GDMB; C. Wedekind, Chairman DMV</p>				
10:30	Coffee Break				Opening Exhibition
11:00	ISM Session	ISM Session	ISM Session	ISM Session	<p>11:30 – 13:00</p> <p>Poster Session</p>
12:40	Lunch Break				
13:40	ISM Session	ISM Session	ISM Session		<p>14:00 – 15:30</p> <p>Poster Session</p>
15:20	Coffee Break				
15:50	ISM Session	ISM Session	ISM Session		Exhibition
17:30	Refreshment Break				
19:00	<p>Opening Ceremony Coronation Hall, Aachen City Hall (Open doors 18.30 Uhr)</p>				
22:00					

9:00 Opening

(Chair ISM President Prof. Dr. A. Preusse)

Welcome addresses:

- > Prof. Dr.-Ing. Axel Preusse, ISM President, RWTH Aachen University, Institute for Mine Surveying, Mining Subsidence Engineering and Geophysics in Mining
- > Michael Geßner, Director General Energy, Nuclear Technology, Mining; Ministry of Economic Affairs, Energy, Industry and Handicraft, NRW
- > Dr. Jürgen-Johann Rupp, Vice President Vereinigung Rohstoffe und Bergbau e.V. (VRB)

Greeting addresses:

- > Prof. Dr. Ernst M. Schmachtenberg, Rector of RWTH Aachen University
- > Dipl.-Ing. Udo Stichling, President of the German Umbrella Organisation for Geographic Information (DDGI)
- > Dr.-Ing. Jens Riecken, Vice President DVW, Society for Geodesy, Geoinformation and Land Management (DVW)
- > AssProf. Dr. mont. Gerhard Mayer, Executive Director Austrian Miners Association (BVÖ), Montan University Leoben, Austria
- > Dipl.-Ing. Thomas Neu, Presidium GDMB, Society of Metallurgists and Miners (GDMB)
- > Dipl.-Ing. Carsten Wedekind, Chairman of the German Mine Surveyor Association (DMV)

10:30 Coffee Break

ISM POSTERSESSION 1

11:30 – 13:00

Chairman: J. Krämer, R. Schulte, RWTH Aachen, DE

Research on land suitability evaluation of Jiaozuo city coal mining subsidence area

Z. Wenzhi, R. Xiaofang, Henan Polytechnic University, CN

A study on tunnel surrounding rock deformation control method of high-stress soft rock roadways at Ronghua Mine

M. Fuyi, Heilongjiang University of Science and Technology, CN
D. Huayang, Z. Biao, G. Junting, CN
University of Mining and Technology, CN

Variation analysis for the surface displacement and deformation laws of repeated exploitation under the thick alluvium

L. Weicai, Z. Meiwei, P. Shenyun, S. Xingping, Anhui University of Science and Technology, CN

Mine tailings ponds monitoring using satellite imagery

V. Poncos, F. Serban, D. Teleaga, Advanced Studies and Research Center, RO
S.-A. Toma, Military Technical Academy, RO

Dry reservoir Niederpöbel historical mining and environmental conservation

S. Bachmann, R. Tynior, G.U.B. Ingenieur AG, DE
C. Hemker, Archaeological Heritage Office

A monitoring method and accuracy evaluation for mining subsidence based on D-InSAR

G. Zengzhang, Ma Chao, Henan Polytechnic University, CN

Horizontal displacements in view of a priori and a posteriori modeling

J. Jura, Z. Niedojadło, T. Stoch, AGH University of Science and Technology in Krakow, PL

Research of assessment model of flood disaster loss based on the comprehensive improvement of bp algorithm

L. Xiaosheng, H. Feihui, W. Tingli, Jiangxi University of Science and Technology, CN

Europasaal

K 4/5

K 7/8

K6

Chairman: G. Mayer, Montanuniversity Leoben, AT

Chairman: R. Hejmanowski, University of Science and Technology Cracow, PL

Chairman: M. Livingstone-Blevins, Anglo American, ZA

Chairman: M. Mathey, University of the Witwatersrand, ZA

11:00

Multi-sensor system with a terrestrial laser scanning system for kinematic geo-data acquisition above and below water
T. Hillmann, University of Applied Sciences Neubrandenburg, DE

Data-adaptive approximation strategy for monitoring and analysis of height changes
C. Holst, C. Eling, H. Kuhlmann, University of Bonn, DE

The Use of Sensor derived data in optimization along the mine value chain: an overview and assessment of techno-economic significance
M. Buxton, J. Benndorf, TU Delft, NL

ABET Accreditation Facilitates International Mobility of Graduates of Mining Programs
F. Hart, PS, PE, D. Duran Baron, ABET, US

11:25

New Method of Swing Observation to Determine Accurate Plummet Position at the Plumb Line for Both Connecting Surveys and Orientation Measurements
M. Novosad, H. Staňková, P. Cernota, Technical University of Ostrava, CZ

Integrating full-waveform terrestrial laser scanning into automated slope monitoring
A. Afana, J. Williams, R. Hardy, N. Rosser, Durham University, UK
G. Hunter, J. Davis, 3D Laser Mapping, UK

DUDE, the underground surveying GIS of RAG – an information system for deposit projection and mine maps
M. Drobniewski, RAG, M. Diehl, J. Stollitz, Atos IT-Dienstleistung und Beratung, DE

What Mining Engineers should know about Mine Surveying?
S. Naidoo, O.P. Oshokoya, University of the Witwatersrand, ZA

11:50

GMES4Mining: GMES-based geoservices for mining areas
V.E.G. Millán, A. Mütterthies, K. Pakzad, S. Teuwsen, EFTAS, DE
N. Benecke, K. Zimmermann, DMT, DE
J. Kateloe, A. Preusse, RWTH Aachen, DE
K. Helle, C. Knoth, Münster University, DE

Effects of Geological Faults on the Design of Deformation Monitoring Networks in Open Pit mines
A. Szostak-Chrzanowski, University of New Brunswick, CA, and Wrocław University of Technology, PL
Adam Chrzanowski, University of New Brunswick, CA

Mine surveying jobs of a greenfield mining investment
I. Havasi, I. Zergi, University of Miskolc, HU
S. Biró, chartered mine surveyor, HU
L. Nagy Omya, Hungary Ltd, HU

Modeling the distribution pathways of trace metals from accumulated tailing sites
K. Maas, University of Applied Sciences Hochschule Ostwestfalen-Lippe, DE
J.S. Ogola, University of Venda, K. Matshusa, Council for Geoscience, ZA

12:15

High spatio-temporal sampling of slope displacements at surface mines using SlopeSCAN (slope stability radar surveying)
A. Thomas, M. Wooster, R. Holley, CGG NPA Satellite Mapping, UK

Numerical Modelling Techniques for Deformation Evaluation of Abandoned Mines
A. Sarfraz, N. van der Merwe, F. Cawood, M. Mathey, School of Mining Engineering, University of the Witwatersrand, ZA

New Methods for the Analysis, Forecasting and Planning of Mining and Geometric Parameters
St. Topalov, K. Boev, V. Hristov, University of Mining and Geology, BG

The Current Situation and Opportunities of Subsidised Land Reclamation in Coal Mining Areas in China
S.-L. Zhang, H.-P. Hou, Y.-J. Yang, Y. Zhang, J.-L. Zhang, China University of Mining and Technology, CN

12:40 Lunch Break

Europasaal		K 4/5	K 7/8	K6	Gallery
13:40	<p>Chairman: W. Busch, University Clausthal, DE</p> <p>Methods and Means for Solving Mining Geometry Problems in Bulgaria N. Valkanov, Minstroy Holding JSC, BG K. Boev, St. Topalov, University of Mining and Geology, BG</p>	<p>Chairman: J. Zha, School of Environment and Spatial Informatics, CN</p> <p>Study on whole mining technology with twice strip mining method H. Bingnan, China Coal Research Institute, CN H. Yining, Jangho Curtain Wall Australia Pty Ltd, AU</p>	<p>Chairman: O. Lohsträter, MIBRAG mbH, DE</p> <p>Capturing and Assessment of Abandoned Mining Areas in Mongolia First results from an international Project K. Maas, University of Applied Sciences Hochschule Ostwestfalen-Lippe, DE L. Purev, D. Oyunaa, U. Damdinsuren, Mongolian University of Science and Technology, MN</p>		<p>ISM POSTERSESSION 2 14:00 – 15:30</p> <p>Chairman: J. Krämer, R. Schulte, RWTH Aachen, DE</p> <p>Influence of underground mining exploitation on geosynthetic reinforced soil structures P. Kalisz, Central Mining Institute, PL</p> <p>Research on the real-time monitoring system for coal mining subsidence based on GIS and GPS integration Y. Xuexiang, Z. Meiwei, L. Weicai, Z. Xingwang, Anhui University of Science and Technology, CN</p> <p>Observed run of vertical displacements of mining ground in the period connected with mining tremor V. Sokola-Szewiola, R. Mielimaka, The Silesian University of Technology, PL</p> <p>Study on the strata movement theory and application of coal mining with solid filling W. Lei, Z. Xianni, Anhui University of Science and Technology, CN G. Guangli, China University of Mining & Technology, CN G. Mengxian, Chizhou University, CN</p>
14:05	<p>Mine surveying below the water level G. Mayer, R. Pilgram, University of Leoben, AT</p>	<p>Research on laws and computational methods of dynamic surface subsidence deformation H. Leting, Tiandi science & technology, CN</p>	<p>„CanoSeco – The Casablanca Underground Coal Mine Project” – provision of permit procedure and public relations support for a mining project using modern technical marketing methods K. A. Hirsch, DMT, DE</p>		
14:30	<p>Fast Ground Based Synthetic Aperture Radar (FastGBSAR): a novel sensor for real-time deformation monitoring S. Rödelasperger, A. Coccia, C. Trampuz, D. Vicente, A. Meta, MetaSensing BV., NL</p>	<p>Surface subsidence features of high intensity top coal caving mining method G. Wenbing, Z. Youfeng, B. Erhu, Henan Polytechnic University, CN</p>	<p>Empirical technique for estimating errors in volume and cost on inventory of raw materials C. F. Meneses Delgado, Universidad de Boyacá, CO</p>		
14:55	<p>GIS-based methodology for assessing effects of mining on the surface infrastructure J. Blachowski, Wroclaw University of Technology, PL A. Chrzanowski, University of New Brunswick, CA A. Szostak-Chrzanowski, University of New Brunswick, CA and Wroclaw University of Technology, PL</p>	<p>The establishment and application of mining damage evaluation system L. Wensheng, W. Zuoqi, Liaoning Technical University, CN</p>	<p>Rehabilitation of mines with tourist and educational potential. The case of lead mines in Bellmunt del Priorat (Tarragona, Spain) A. Deu Lozano, J.C. Melgarejo Draper, Universitat Politècnica de Catalunya, SP G. Barceló Parellada, Museu de les Mines de Bellmunt del Priorat, Tarragona, SP</p>		
15:20	Coffee Break				
	<p>Chairman: F. Hart, ABET, US</p>	<p>Chairman: V. Gordeev, Ural State Mining University, RU</p>	<p>Chairman: I. Havasi, University of Miskolc, HU</p>		<p>Reform and innovation of practice teaching in mine surveying for PETOE C. Zhichao, L. Changhua, L. Yiling, Henan Polytechnic University, CN</p>
15:50	<p>Changing the Face of Mine Management Combining Topcon's Mobile Mapping and Scan data for efficient site management A. Evans, M. Geiß, Topcon Europe Positioning BV., NL</p>	<p>Creating elements of mining and geological information system of mining companies A.V. Kataev, S.N. Kutovoy, Perm National Research Polytechnic University, RU</p>	<p>International experience of the influence of rock mechanics on gas emission control T. Imgrund, A. Studeny, J. te Kook, DMT, DE</p>		<p>Monitoring of areas undermined by subsurface mining L.S. Shamganova, K.K. Tulebaev, G.K. Djangulova, M.N. Omiralin, L.M. Kokisheva, Institute of Mining named after D.A. Kunaev, RU</p>
16:15	<p>A new approach for shaft monitoring by kinematic laser scanning N. Benecke, M. Weber, DMT, DE</p>	<p>Development and Experimental Studies of Highly Sensitive Fiber-Optic Sensors for Survey Gyro-Compasses L.N. Shalimov, V.A. Gordeev, N.G. Manyko, A.P. Badulin, G.V. Shestakov, A.N. Shtykov, Ural State Mining University, RU</p>	<p>Study on effect of backfilled coal gangue reclaimed land on soil environment and crop X. Liangji, L. Huiping, Y. Jiaping, Anhui University of Science and Technology, CN H. Meuser, L. Makowsky, University of Applied Sciences Osnabrück, DE</p>		<p>Assessment of water conducting fracture zones height by determining the boundary horizontal deformation for geological conditions of the Yakovlevski mine. V.N. Gusev, D. A. Iliukhin, National Mineral Resources University, RU A.E. Zhuravlev, Jet Technology and Construction, RU</p>
16:40	<p>Scan registration without targets with full statistical analysis F. Gielsdorf, technet GmbH, DE</p>	<p>Determination of optimal distance between the laser-scanning system and reflectors for surveying mining facilities. V.N. Gusev, M.G. Vystrchil, National Mineral Resources University, RU</p>	<p>Spatial-temporal distribution of surface deformation in the light of the observed damages in pipelines A. Malinowska, R. Hejmanowski, M. Szadziul, AGH University of Science and Technology in Krakow, PL</p>		<p>Distribution Laws of Mining-induced Surface Fissures under thick Unconsolidated Layers G. Junting, D. Huayang, L. Aijun, Z. Biao, Q. Lijun, China University of Mining & Technology, CN</p>
17:30	Refreshment Break				
19:00 doors open 18:30	Opening Ceremony, Coronation Hall of Aachen City Hall	<ul style="list-style-type: none"> ▶ Welcome address by ISM President Prof. Dr. A. Preusse ▶ Greetings: M. Philipp, Mayor of the city of Aachen; M. Sittard, Esri Deutschland GmbH ▶ Keynote Speaker: Prof. Dr. E. Heindl, Heindl Internet AG, University Furtwangen; Eschweiler Scharwache 1882 e. V. 			



Cultural Program

C2

Combined guided tour of the Cathedral and the TreasuryBoth

Both, the Aachen Cathedral and the Treasury are the absolute highlights of Aachen – a must-see for every Aachen visitor and culture-fancier.

- ▶ 2–3 hour guided tour in Aachen
- ▶ Meeting Point: 15:15 in front of Eurogress or individual 15:30, Aachen Cathedral Information Center “Dominformation”, Johannes-Paul-II-Straße
- ▶ German guides

Social Program

S2

Opening Ceremony

The official opening of the ISM Conference will take place in the Coronation Hall of Aachen City Hall. Opening speeches and cultural events will frame the ceremony.

- ▶ Meeting Point: 18:30, Coronation Hall, Aachen City Hall, Markt, Aachen

Daily Overview

Wednesday, 18 September 2013

	Europasaal	K4/5	K7/8	Foyer	Gallery
8:30	EuR Session	ISM Session	ISM Session	Exhibition (9:00 – 18:00)	9:00 – 10:30 Poster Session
10:10	Coffee Break				
10:40	EuR Session	ISM Session	ISM Session	Technical Forum of Exhibitors	11:00 – 12:30 Poster Session
12:20	Lunch Break				
13:20	EuR Session	ISM Session	ISM Session	Technical Forum of Exhibitors	
15:00	Coffee Break				
15:30	EuR Session	ISM Session	ISM Session	Technical Forum of Exhibitors	
17:30	Refreshment Break				
18:30	Shuttle Eurogress – Rahe Castle				
19:00	Mine Surveyors Evening, Rahe Castle				

	Europasaal	K 4/5	K 7/8	Foyer	Gallery
	<p>Chairman: A. Sroka, University of Freiberg, DE</p>	<p>Chairman: J. Fugmann, arguplan GmbH, DE</p>	<p>Chairman: H.W. Jakobs, Emschergerossenschaft, DE</p>	<p>Technial Forum of Exhibitors</p>	<p>ISM POSTERSESSION 3</p>
8:30	<p>GeoLink – Das Geodatenportal der RWE Power C. Weyand, RWE Power, DE</p>	<p>Forming peculiarities and manifestation of tectonic faults in soft rocks I. Khalymendyk, M. Chemakina, National Mining University, UA</p>	<p>Dynamics of the technical and social transformation of an industrial region shaped by mining E. Grün, Emschergerossenschaft/Lippeverband, DE</p>	<p>11:00 Esri The new Esri ArcGIS platform Lutz Ernesti</p>	<p>9:00 – 10:30 Chairman: J. Krämer, R. Schulte, RWTH Aachen, DE</p> <p>Zone of influences of large tectonic faults in the Rhineland Lignite Coalfield A. Preusse, R. Schulte, RWTH Aachen University, DE</p> <p>The application of fractal filtering in the noise reduction of GAT high-precision maglev gyro Y. Zhiqiang, Q. Peng, Chang'an University, CN</p> <p>A new algorithm for point cloud data segmentation of building group with airborne laser scanning Z. Guohui, Y. Peng, S. Quan, L. Shaochun, Liaoning Technical University, CN</p>
8:55	<p>Monitoring of opencast-mine rim slopes – state of the art at RWE Power AG W. Guder, D. Dahmen, RWE Power, DE</p>	<p>The development of rock mass deformations on the Ridder-Sokolny polymetallic ore deposit and protection shafts from undermining Y.A. Kashnikov, S.G. Ashikhmin, DV. Shustov, Perm National Research Polytechnic University, RU</p>	<p>New measurement procedures for control measurements in pipe jacking works by means of autonomously driving robots R. Kemper-Böninghausen, H.-W. Jakobs, Emschergerossenschaft, DE</p>	<p>11:15 Trimble Trimble geospatial solutions for a mining environment Jörg Amend</p>	<p>Detailed 3D roadway modeling method in coal mine L. Yongqiang, Beijing Normal University, Henan Polytechnic University, CN L. Huiyun, G. Zengzhang, S. Peng, N. Lubiao, Henan Polytechnic University, CN</p>
9:20	<p>Großräumige Detektion von Bodenbewegungen mit den neuen europäischen Radarsatelliten Sentinel-1 unter Verwendung eines Multi-Referenzpunkt-Ansatzes A. Brall, S. Knospe, W. Busch, TU Clausthal, DE</p>	<p>Monitoring of Land Subsidence Influenced by an Underground Mining Activity by means of the Gatewing X100 J. Beck, M. Plakinger, Hornonitrianske bane Prievidza Company, SK Mr. Marek Fraštia, Technical University Bratislava, SK</p>	<p>Lagging mining damage in the Netherlands? Recent signs of soil movement in the Zuid-Limburg coal district I. de Vent, H. Roest, Staatstoelicht op de Mijnen, NL</p>	<p>11:30 DMT Solutions for exploration, documentation and monitoring of underground mining operations Norbert Benecke</p>	<p>Department MSG&GIS experience of improving the accuracy of monitoring subsidence by radar interferometry V.V. Musikhin, State National Research Polytechnic University of Perm, RU</p>
9:45	<p>Vermessung unzugänglicher luftgefüllter Hohlräume mittels Laserscanning J. May, DMT-Leipzig, DE</p>	<p>The model of surface subsidence process at subsidence through formation V. Nazarenko, A. Kuchin, M. Chemakina, National Mining University, UA</p>	<p>Impact of mining exploitation on water mains in Upper Silesian Coal Basin M. Zięba, P. Kalisz, Central Mining Institute, PL</p>	<p>11:45 Leica The new Leica Nova MS50 MultiStation and its use in mining applications Jürgen Mayer</p>	<p>Some special methods of tunneling excavation modeling on the basis of the finite element method in estimating of the earth's surface displacements and strains above the tunnels E.M. Volohov, S.U. Novozhenin, N.S. BAK, National Mineral Resources University, RU</p>
10:10	<p>Coffee Break</p>			<p>12:00 Riegl Milan RIEGL Laser Scanners: 12 years of experience in mining and mine rehabilitation Thomas Gaissecker, Sven Jany</p>	<p>Contribution of Hungarian Mine Surveyors to the work of International Society for Mine Surveying (ISM) from the beginning to our days I. Havasi, University of Miskolc, HU</p>
10:40	<p>Chairman: M. Clostermann, Clostermann Consulting, DE</p> <p>Zum Monitoring von Bodenbewegungen mit Radarsystemen im Forschungsprojekt GMES4Mining A. Fleer, K. Zimmermann, DMT, W. Guder, C. Weyand, RWE Power, DE</p>	<p>Chairman: A. Malinowska, University of Science and Technology Cracow, PL</p> <p>Impact of the direction and sequence of mining exploitation on the form of the subsidence trough in the aspect of geodesy observations Sokola-Szewiola, R. Mielimąka, The Silesian University of Technology, PL</p>	<p>Chairman: H.W. Jakobs, Emschergerossenschaft, DE</p> <p>Planning long-term mine-water management for the Ibbenbüren coal basin P. Goerke-Mallet, M. Drobniowski, RAG, DE</p>		<p>Top caving mining technology under unconsolidated weak sand aquifers in Lingdong coal mine L. Xue, K. Yonghua, Tiandi Science & Technology Co., LTD, MN M. Xianglin, W. Feng, L. Zhenyu, C. Wentao, W. Shaokun, Zalannuoer Coal Mining, CN</p>
11:05	<p>Erfahrungen bei der Anwendung eines Verfahrens zur Standsicherheitsbewertung bestehender Abbaufelder im Kaliberbergbau A. Hoberg, K+S KALI GmbH, DE</p>	<p>Monitoring of the Geodetic Height Profile of the Ervénice Corridor Ja. Blin, Coal Services, M. Mikoláš, Jo. Blin, Technical University of Ostrava, CZ</p>	<p>Flooding of the underground uranium mines at Ronneburg and Königstein – a drawn-out finish D. Baacke, U. Jenk, M. Paul, Wismut, DE</p>		
11:30	<p>Ansatz für den Aufbau eines komplexen 3D-Lagerstättenmodells einer Braunkohlen-lagerstätte unter Nutzung geostatischer Simulationsverfahren A. John, TU Bergakademie Freiberg, DE</p>	<p>Defining the parameters of land subsidence process for Vietnam coal basin K. K. Truc, Vietnam National Coal, VN</p>	<p>Overflow lands caused by underground mining exploitation in Bytom O. Kaszowska, Central Mining Institute, PL</p>		
11:55	<p>Maßnahmen zur Erhöhung der Ressourceneffizienz am Beispiel einer Lagerstätte und deren Umsetzung bei Neuerschließung von untertägigen Rohstoffvorkommen W. Riedel, Consulting & Engineering GmbH, Chemnitz, DE H. Tscheschlok, CDM Smith Consult GmbH, Berlin, DE L. teKamp, ITASCA Consultants GmbH, Gelsenkirchen, DE E. Fahning, TU Bergakademie Freiberg, DE</p>	<p>Determining mining excavations predisposed to the discontinuous deformation of land surface using a two-stage method K. d'Obyrn, P. Ulmaniec, Technical University in Krakow, PL A. Malinowska, R. Hejmanowski, AGH University of Science and Technology Krakow, PL</p>	<p>Ground Deformation Analysis of Abandoned Mines under Flooded Conditions A. Sarfraz, N. van der Merwe, F. Cawood, M. Mathey, School of Mining Engineering, University of the Witwatersrand, ZA</p>		

12:20 Lunch Break

> ISM-Postersession 4
11:00 – 12:30, next page

	Europasaal	K 4/5	K 7/8	Foyer	Gallery
	<p>Chairman: C. Wedekind, Wismut GmbH, DE</p>	<p>Chairman: G. Powell, University of Glamorgan, UK</p>	<p>Chairman: Hu Bingnan, China Coal Research Institute Beijing, CN</p>	<p>Technial Forum of Exhibitors</p>	<p>ISM POSTERSESSION 4</p>
13:20	<p>Prognose flutungsbedingter Bodenbewegungen über dem Uranbergwerk Königstein mit numerischen Strukturmodellen U. Gross, Geotechnik Projekt GbR, DE, C. Wedekind, Wismut GmbH, DE</p>	<p>Studies on the movement of rocks in the development of ore deposits in Bulgaria G. Georgiev, BG St. Topalov, University of Mining and Geology, BG</p>	<p>Technologies and applications for multi-source monitoring of surface disasters in mining area W. Yunjia, W. Jian, H. Yi, T. Feng, C. Guoliang, China University of Mining and Technology, CN</p>	<p>14:00 Maptek How I-Site integrates laser scanning with survey, geological analysis and mine planning processes Graeme Cowie</p>	<p>11:00 – 12:30 Chairman: J. Krämer, R. Schulte, RWTH Aachen, DE</p> <p>Study on testing and comprehensive assessment methods of coalmine goaf treatment effect Z. Gangyan, Z. Youping, Tiandi Science & Technology, CN</p>
13:45	<p>Überwachung der Senkungsvorgänge im Senkungsgebiet des Lüneburger Salzstockes – Stadtgebiet von Lüneburg T. Trapp, CDM Smith Consult GmbH, DE</p>	<p>Study on laws of overlying strata failure and its prediction method for gangue backfilling mining Z. Jianfeng, W. Qiang, G. Guangli, China University of Mining and Technology, CN</p>	<p>Development of mine typical object spectral library management system J. Min, L. Ting, F. Junfu, S. Yong, G. Lifeng, J. Fengxiang, Shandong University of Science and Technology, CN</p>	<p>14:15 Esri The new Esri ArcGIS platform Lutz Ernesti</p>	<p>The research and construction of coal mine three-dimensional visualization transparent geological platform Z. Rongsheng, Y. Fan, Z. Ziwen, Liaoning Technical University, CN</p>
14:10	<p>Die Auswirkungen altbergbaulicher Großschadensereignisse auf das bergbehördliche Handeln im Land NRW L. Hermes, P. Högerebe, Bezirksregierung Arnsberg, DE</p>	<p>Investigation on ground fissure and its mechanism caused by coal mining X. Aigong, Y. Fan, Z. Ruishan, S. Jinfeng, S. Weidong, Liaoning Technical University, CN</p>	<p>Research on north-seeking data characteristics of the malev gyro based on two-position rotary technology S. Zhen, Y. Zhiqiang, Z. Zhe, Chang'an University, CN</p>	<p>14:30 Trimble Trimble Geospatial Solutions for a mining environment Jörg Amend</p>	<p>Research on coal gangue mountain's ecological restoration and reconstruction based on ecological development theory W. Jianmin, Y. Jikai, B. Xiaoguang, Liaoning Technical University, CN</p>
14:35	<p>Dokumentation und Prognose von Bodenbewegungen im Rheinischen Braunkohlenrevier W. Schaefer, RWE Power, DE</p>	<p>Geological, mining and construction circumstances of large buildings failures in Bytom-Karb A. Kowalski, P. Gruchlik, Central Mining Institute, PL M. Kawulok, L. Slowik, Building Research Institute, PL</p>	<p>Study on surface's lurking deformation and construction land planning of subsidence areas C. Huabin, Z. Youfeng, Henan Polytechnic University, CN</p>	<p>14:45 Leica UAV by Leica Ruedi Wagner</p>	<p>Research on surface movement of strip mining under buildings and huge thick loess coverage area L. Jinhui, Tangshan Branch of China Coal Research Institute, CN</p>
15:00	Coffee Break				
	<p>Chairman: J. Kittlaus, RWE Power AG, DE</p>	<p>Chairman: V. Gordeev, Ural State Mining University, RU</p>	<p>Chairman: Hu Bingnan, China Coal Research Institute Beijing, CN</p>	<p>15:15 Maptek How I-Site integrates laser scanning with survey, geological analysis and mine planning processes Graeme Cowie</p>	<p>The connotations and key technologies of geospatial framework for mines C. Gang, M. Mingkai, J. Bao, Henan Polytechnic University, CN</p>
15:30	<p>Genehmigungsfähigkeit von Fracking W. Frenz, RWTH Aachen, DE</p>	<p>Conceptual model of development of the subsoil geometry and qualimetry V. Rudenko, Moscow State Mining University, RU A. Vedyayev Senior Geologist, Alcomp-Europa, RU</p>	<p>Application of terrestrial LiDAR technique in mining subsidence monitoring W. Jian, D. Yuan, J. Min, C. Qingdong, Shandong University of Science and Technology, CN J. Fengxiang, Shandong Jianzhu University, CN</p>	<p>15:30 DMT International mining consulting and engineering by DMT and IMC Ulrich Ruppel</p>	<p>Land use change detecting in mining areas by using landsat TM and CBERS CCD Data: A Case Study in Shenyang, Northeast China L. Zhenggang, L. Ling, Liaoning Technical University, CN</p>
15:55	<p>Vom digitalen Risswerk zu einer umfassenden Darstellung der bergbaulichen Verhältnisse bei Sanierungsmaßnahmen im Altbergbau G. Brüggemann, T. Friedrich, A. Ziegler, DMT, DE</p>	<p>Current Issues of Geomechanical Supervision of Earth Mineral Ressources Exploitation and the Ways of their Solutions K.N. Trubetskoy, M.A. Iofis, A.V. Grishin, IPKON RAS, RU</p>	<p>Acting of new energy resources in sustainable development of mine cities and new duties of mine surveying Y. Changxing, CN</p>	<p>15:45 Trimble Trimble Geospatial Solutions for a mining environment Jörg Amend</p>	<p>3D modeling implementation and application of urban architecture based on vehicle-borne laser-scanning technology L. Changhua, L. Runzhi, Henan Polytechnic University, CN</p>
16:20	<p>Das neue CCS-Gesetz Basis für eine „Brückentechnologie“ und Vorbild für Reformen des Bergrechts? A. Rehs, Allen & Overy LLP, DE</p>	<p>The modern state of the mine surveying services of the mining enterprises of Kazakhstan F.K. Nizametdinov, D.V. Mozer, Karaganda State Technical University, KA</p>	<p>The simulation technology of laneway engineering seamless excavating based on 3D geosciences modeling C. Defu, X. Chunhua, M. Hongbin, Z. Xinhe, Northeastern University, CN Z. Ruixi, Kailuan Group, CN</p>	<p>16:00 Esri The new Esri ArcGIS platform Lutz Ernesti</p>	<p>Slope stability monitoring and analysis in Anjialing Open-pit Mine X. Fakui, Tiandi Science & Technology, CN</p>
16:45	<p>Brandenburg 3D – a comprehensive 3D subsurface model, conception of an infrastructure node and a web application D. Kerschke, M. Schilling, J. Wächter, CeGIT, DE A. Simon, LBGR, DE</p>	<p>Cooperation with mining companies in the preparation of Mining Engineers Surveyors A. Okhotin, A. Zagibalov, National Research Irkutsk State Technical University, RU</p>		<p>16:15 Exelis Software technologies for multi sensor remote sensing in geology Rene Günzkofer</p>	
17:10	<p>Zur rechtlichen Bedeutung von markscheiderischen Feststellungen und Prognosen H. Knöchel, RAG, DE</p>			<p>16:30 MDL Using borehole deployable laser scanning to increase mining productivity and safety Anthony Comber</p>	
17:30	Refreshment Break				
19:00	Mine Surveyors Evening, Rahe Castle	▶ Shuttleservice: 18:30 in front of Eurogress			



Cultural Program

C3

Three Countries Tour: Germany, Netherlands, Belgium

Visit our European neighbors and get to know the three-country corner Germany-Netherlands-Belgium in only six hours. The tour starts in Aachen and takes you to the Three-Country Point in Vaals (NL), the highest point in the Netherlands. From here, the tour continues to Maastricht, where you can stroll through this city of arts and culture. In Belgium, you will visit the picturesque Val Dieu Abbey in Aubel, and return to Aachen through the “Butterländchen” (butter country).

- ▶ one-day trip from Aachen
- ▶ Meeting Point: 10:00, bus stop Monheimsallee in front of Quellenhof
- ▶ English and German guides
- ▶ Lunch

Social Program

S3

Mine Surveyors Evening

The traditional mine surveyors evening takes place at Rahe Castle, near Aachen. With rustic dishes and refreshing drinks, the first day of the conference end with stimulating conversation and new contacts. The event will be accompanied by a miners choir and a common „Glückauf“ miners song at midnight.

- ▶ Meeting Point: 19:00, Rahe Castle, Schloss-Rahe-Straße 15, Aachen
- ▶ organized bus transfer, 18:30 in front of Eurogress
- ▶ Directions: <http://www.schlossrahe.de/anfahrt.html>

Daily Overview

Thursday, 19 September 2013

	Europasaal	K4/5	K7/8	K6	Foyer/Gallery
8:30	ISM Session	ISM Session	ISM Session		Exhibition
10:10	Coffee Break				
10:40	ISM Session	ISM Session	ISM Session	ISM Young Authors Session	
12:20	Lunch Break				
13:30	ISM Presidium Meeting		DMV Members Assembly		
15:30	Coffee Break				
16:00	ISM Members Assembly				
17:30	Refreshment Break				
19:00	Gala Dinner, Quellenhof				

	Europasaal	K 4/5	K 7/8	K6	Gallery
	Chairman: K. Nyström, Boliden Mineral AB, SE	Chairman: O. Wallner, Wismut GmbH, DE	Chairman: P. Goerke-Mallet, RAG, DE		
8:30	Scanning experience in underground copper ore mines at KGHM Polska Miedz S.A. R. Hejmanowski, A. Malinowska, AGH University of Science and Technology Krakow, PL G. Patykowski, J. Mlynarczyk, Ł. Markiewicz, KGHM Polska Miedz S.A., PL	Analysis of the state of the earth's crust and lithosphere of the Northern Tien Shan A. Bibossynov, B. Kurmanov, A. Kairanbayeva, K. Sadykov, DTOO „Ionosphere Institute“, KZ	Monitoring techniques for a complex building survey in the city of London during the Crossrail Tunnelling Project M. Jakobs, T. Paßlick, GeTec, DE P. Thurlow, Getec, UK		
8:55	Lighting up GNSS positioning blackspots in open pits thanks to the Leica Jigsaw Positioning System R. Keenan, B. Lilly, Leica Geosystems Mining Division, AU R. Michaelsen, Leica Geosystems Mining Division, NO	Condition and prospects of geomechanical ensuring development at open-cast mining F.K. Nizametdinov, S.G. Ozhigin, R.F. Nizametdinov, S.B. Ozhigina, N.F. Nizametdinov, Karaganda State Technical University – KSTU, KA	Spatial positioning in a narrow tunnel environment: Comparing accuracies of survey control established in the roof against sidewall networks H. Grobler, University of Johannesburg, ZA F. Cawood, University of the Witwatersrand, ZA		
9:20	How 3D data can be used to more effectively mine to plan J. Jobling Purser, J. Galloway, N. Hewitt, 3DMSI Ltd, UK	Justification for necessary accuracy and frequency of surveying observations at the spoil dumps G. V. Alexandrovich, Y.V. Nikolaevich, Ural State Mining University, RU	Interpretation and modeling of sonar cavern surveys P. Wurmbauer, Z. Ma, SOCON Sonar Control Kavernenvermessung, DE		
9:45	Application of a satellite radar interferometry in Kazakhstan D.V. Mozer, A.K. Satbergenova, A.S. Tuyakbay, A.A. Nagibin, Karaganda State Technical University, KA	Forecasting hazardous areas when mining coal layers M. G. Mustafin, National University of Mineral Resources „Mining“, RU K.K. Elimanov, Karaganda State Technical University, KZ B.B. Doskaliev, ArcelorMittal-Temirtau, KZ	Effective slope stability monitoring with a long-range terrestrial laser scanner A. Fowler, A. Ullrich, M. Pfennigbauer, RIEGL Laser Measurement Systems GmbH, AT	ISM Young Authors Session	
10:10	Coffee Break				
	Chairman: A. Reitze, SOCON Sonar GmbH, DE	Chairman: M. Vrubel, Severočeské doly a.s., CZ	Chairman: D. Wanke, Cape Lambert Resources, SL	Chairman: A. Jarosz, AU	
10:40	Thermic inventory of mining corridor in Dąbrowa Górnicza P. Lewińska, S. Kubiak, AGH University of Science and Technology Krakow, PL	Reducing risk at Mining Waste Operations and Facilities G. Powell, University of Glamorgan, UK	Preparation of specialists of mine surveying profession in National mineral resources university (Mining university) V. Golovanov, National Mineral Resources University, RU	Geophysical and geodetical monitoring of slope movements at the Three Gorges Dam area in China S. Kremers, K. Zimmermann, A. Fler, DMT, DE	
11:05	Shale gas and CBM – unconventional gas resources in North Rhine-Westphalia (Germany) V. Wrede, Geologischer Dienst NRW, DE	Multivalent use of remote sensing sensors for geology and mining A. Forgber, M. Pilarski, B. Wagner, ILV-Fernerkundung, DE	Providing standards and methodics for mine-surveying service for mining industry of Russia G.P. Zhukov, Laboratory at Geomechanics and Mining Production Problems, RU	Addressing the challenges involved with abandoned underground coal mines in South Africa M. Mathey, University of the Witwatersrand, ZA	
11:30	Geological background & methods for the study of fracture coal seams for coal produced and lumpiness D. Dondov, G. Urbanbaigali, Mongolian State University of Technology and Science, MN R.A. Takranov, National University of Mineral Resource „Mountain“, RU	Deformation monitoring utilising the COSMO-Skymed constellation R. Siegmund, GAF AG, DE M. Costantini, e-geos, IT	Radar interferometric monitoring of sinkhole processes above flooded potash mine in Berezniki, Russia D. Walter, N. Ashrafiyanfar, H.-P. Hebel, W. Busch, TU Clausthal, DE A. Baryakh, Russian Academy of Science, RU	Calculation theory of stability of foundations and slopes A.V. Zhabko, Ural State Mining University, RU	
11:55	Underground pump storage hydropower concepts. Main aspects for the construction of pump storage concepts using existing coal mining infrastructures A. Niemann, E. Perau, U. Schreiber, University of Duisburg-Essen, DE M. K. Koch, University of Bochum, DE W. Eilert, RAG, DE	Mine surveying tasks during planning, construction and approval of new depots in abandoned open-pit mines P. Köpper, Köpper & Partner, DE	INTERNATIONAL Society For Mine Surveyors and German Mine Surveyors Contributions for the international cooperation development Eng. K. Georgiev, BG St. Topalov, University of Mining and Geology, BG	Spatial ETL for GIS and mine mapping data exchange between CAD and GIS C. Dahmen, con terra GmbH, DE	
12:20	Lunch Break				

13:30 ISM Presidium Meeting (K4/5)

DMV Members Assembly (K7/8)

15:30 Coffee Break

16:00 ISM Members Assembly (K4/5)

18:30 Refreshment Break

19:00 Gala Dinner, Quellenhof

- ▶ Champagne reception
- ▶ Salutation by ISM President Prof. Dr. Axel Preusse
- ▶ Award Presentation Young Authors
- ▶ Award Presentation Oskar-Niemczyk-Award
- ▶ Farewell Address by acting ISM President Prof. Dr. Axel Preusse
- ▶ Inaugural address by future ISM President Prof. Dr. Andrew Jarosz
- ▶ Acknowledgments





Cultural Program

C4

City Tour Cologne

This city tour takes you to Cologne, once the capital of the Roman Lower Germania with 2000 years of history. Visit here the most popular sight in Germany, the Cologne Cathedral – World Heritage Site by UNESCO. Your route takes you to the historic town hall, the old market and the famous Cologne breweries: Discover the Cologne lifestyle.

- ▶ one-day trip from Aachen
- ▶ Meeting point: 10:00, bus stop Monheimsallee next to Congress Hotel Quellenhof
- ▶ English and German guides

Social Program

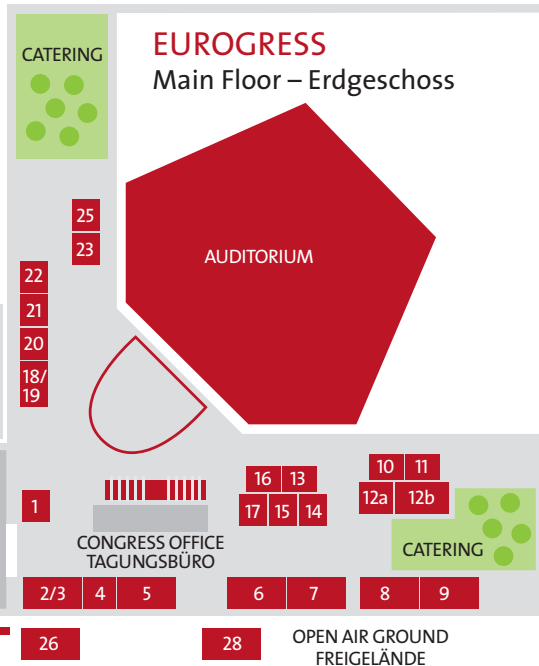
S4

Gala Dinner

The social highlight of the ISM Congress is the Gala Dinner at Hotel Quellenhof. Dine in a stylish ambience with live music and show acts.

- ▶ Meeting Point: 19:00, Hotel Pullman Aachen Quellenhof, Monheimsallee 52

Exhibitors ISM 2013



Opening hours Exhibition

Tuesday, 17 September 2013	9:00-18:00
Wednesday, 18 September 2013	9:00-18:00
Thursday, 19 September 2013	9:00-18:00

- 1** Australian Institute of Mine Surveyors – Brisbane 2016 • Brisbane, Australia | DMV e.V. • Herne, Germany | GDMB • Clausthal-Zellerfeld, Germany
- 2/3** TRIMBLE NAVIGATION, Ltd. • Sunnyvale, USA
- 4** MAPTEK Pty Ltd • Perth, Australia
- 5** Esri Deutschland GmbH • Kranzberg, Germany
- 6** LEICA GEOSYSTEMS AG • Heerbrugg, Switzerland
- 7** RIEGL Laser Measurement Systems GmbH • Horn, Austria | MILAN GEOSERVICE GmbH • Kamenz, Germany
- 8** EFTAS Fernerkundung Technologietransfer GmbH • Münster, Germany
- 9** DMT GmbH & Co. KG • Essen, Germany
- 10** ALBERDING GmbH • Schönefeld, Germany
- 11** Ursus-Airborne • Den Ham, Netherlands
- 12a** Energieagentur NRW • Düsseldorf, Germany
- 12b** RAG Mining Solutions • Herne, Germany | RAG Montan Immobilien • Essen, Germany
- 13** G.U.B. INGENIEUR AG • Zwickau, Germany | VBGU e.V. • Berlin, Germany
- 14** EMSCHERGENOSSENSCHAFT und LIPPEVERBAND • Essen und Dortmund, Germany
- 15** IDS S.p.A. • Pisa, Italy
- 16** 3D LASER MAPPING • Nottingham, Great Britain
- 17** MDL – Measurement, Devices Ltd. • York, Great Britain
- 18/19** TOPCON B.V. • Capelle, Netherlands
- 20** METASENSING • Noordwijk, Netherlands
- 21** CADCOM Systemhaus GmbH • Berlin, Germany
- 22** Fugro Weinhold Engineering GmbH • Erkelenz-Holzweiler, Germany
- 23** EXELIS Visual Information Solutions • Gilching, Germany
- 25** Geometius bv. • Almere, Netherlands
- 26** SOCON SONAR GmbH • Giesen, Germany
- 28** ExxonMobil Production Deutschland GmbH • Hannover, Germany

1. OG Exhibition

1. OG Joint stand Universities:

RWTH Aachen, TFH Bochum, TU Clausthal, TU Freiberg

Technical Tours

Friday, 20 September 2013

Technical Tour (T1): Hard Coal Mine Ruhr Area

This technical tour presents the modern RAG coal mines Prosper Haniel in Bottrop or Auguste Victoria in Marl. The mines are part of powerful RAG operations in the Ruhr area and in Ibbenbüren. In addition to an underground tour of about 2.5 to 3 hours to a mining operation, the mine surveying tasks as well as the information system for management, monitoring and control of the mine are presented. Following the underground tour a final discussion of the impressions takes place.

- ▶ One-day trip
- ▶ Meeting Point: 7:00, bus stop Monheimsallee, next to Congress Hotel Quellenhof
- ▶ Organized transport from Aachen

Additional requirements concerning attendee age and health: Age 18-60 / Not appropriate for handicapped persons or persons with acute health problems.

Technical Tour (T2): Lignite Open Pit Mine Inden

During this technical tour, the opencast lignite mine Inden will be visited and operation as well as mine surveying specific details will be explained. With its annual output of some 22 million tons of lignite, the Inden opencast mine ensures the supply of the Weisweiler power plant. Its coal seams are up to 45m thick and as much as 230m below the surface. To extract the 510 million tons of coal still in the mining field, 1.6 billion cubic meter of overburden will have to be shifted.

- ▶ One-day trip
- ▶ Meeting Point: 12:00, bus stop Monheimsallee, next to Congress Hotel Quellenhof
- ▶ Organized transport from Aachen



Technical Tour (T3): Emschergenossenschaft/Lippeverband – Watermanagement

A project of the century? A big word! But what if not the re-building of Germany's largest industrial region of the Ruhr is a project of the century? Mining industry and water management are faced here with tasks that require vision, innovation, but also public acceptance and the necessary financial resources. In addition to visiting the sites of ongoing construction, this technical tour offers an insight into the duties of the modern water management company Emschergenossenschaft/Lippeverband as river managers in a mining landscape.

- ▶ One-day trip
- ▶ Meeting Point: 7:30, bus stop Monheimsallee, next to Congress Hotel Quellenhof
- ▶ Organized transport from Aachen

Technical Tour (T4): Buir Gravel Open Pit and Plant – Rheinische Baustoffwerke

This excursion brings you to the gravel open pit operation and modern treatment plant of Buir – Rheinische Baustoffwerke. Here, in addition to a presentation of the operation of the plant in detail, mine surveying tasks in terms of planning, approval, control, measurement and management will be explained. During the tour the latest laserscanner technology of Riegl will be demonstrated.

- ▶ One-day trip
- ▶ Meeting Point: 9:30, bus stop Monheimsallee, next to Congress Hotel Quellenhof
- ▶ Organized transport from Aachen

Technical Tour (T5): Closing and Glückauf

In the late afternoon of Friday, 20 September 2013 a common farewell is held at "Haus Barbara" on the grounds of the RWE openpit mine Inden. We welcome you with drinks and a country-style food snack.

- ▶ 16:00 – 19:00 (following T1-T4)
- ▶ Meeting point: 15:30, bus station Monheimsallee, next to Congress Hotel Quellenhof or directly from previous technical tours
- ▶ Bus transfer back to Aachen

Arrival Eurogress

Acces by Car

Your navigational system will find Eurogress Aachen using the following address: > Monheimsallee 48, 52062 Aachen

Visitors without a navigational system should orientate themselves by the urban signage > Eurogress > Casino > Kurpark.

The following freeways directly lead to Aachen:

- ▶ From Cologne, Düsseldorf, Lüttich: A4 (E40) "Aachener Kreuz" > follow A544 > exit "Europaplatz" (freeway ends here) > leave the traffic circle towards city center
- ▶ From the Netherlands: A4 (E40) > exit "Aachen Zentrum" > turn right towards city center

Arrival by Train

Please inform yourself about your personal train connection on DB's webpage (www.bahn.de).

From the central train station the Eurogress Aachen is accessible using the lines 3A and 13A towards "Ponttor". You arrive at the fifth station "Eurogress/Spielcasino". On workdays the buses run at 7-minute intervals.

City Map





Imprint

ISM 2013 – International Society for Mine Surveying

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