

Programm  
Programme

2017

# STUVA-Tagung *STUVA Conference*

*International Forum for  
Tunnels and Infrastructure*

6–8 December 2017  
Stuttgart, Germany

**Separates Segment Tunnelbetrieb!  
Separate Segment Tunnel Operation!**

**STUVA**



Univ.-Prof. Dr.-Ing.  
Martin Ziegler  
*Chairman of the Board*  
*Vorsitzender des Vorstandes*



Dr.-Ing.  
Roland Leucker  
*Managing Director*  
*Geschäftsführer*

## Dear Colleagues,

Do you sometimes have the impression that the constantly increasing deadline stress often leaves little time in your daily affairs to make new contacts or refresh old contacts, to see beyond your own nose or be open for new ideas? In order to offer assistance, we invite you to the STUVA Conference! At this "family get-together of tunnellers", you can meet more than 1,800 other high-grade experts, and the altogether 65 talks will provide you with an opportunity to inform yourself according to your precise objectives about the latest developments and develop your own views.

After the great success of the STUVA Conference in 2015, separate series of talks will be offered again this year on Tunnelling and Tunnel Operation. In parallel to the talks, a wide-ranging exhibition landscape, the STUVA-Expo, will be set up with about 180 exhibitors offering an impressive insight into the innovation power of our tunnel industry. One highlight of the STUVA Conference is certainly the Festive Evening, because a well-developed network is one of the most important success factors in the profession and thrives on an unstressed exchange of thoughts and experience among colleagues.

The Federal Ministry of Transport and Digital Infrastructure (BMVI), the Federal Highway Research Institute (BAST) and the German Tunnelling Committee (DAUB) have this year once again shown their confidence in us by acting as the ideal supporters, and we thank them sincerely for this strong support, which marks the STUVA Conference as an exceptional event.

Take part in the largest meeting of the industry worldwide! We are convinced that the STUVA Conference will once again provide you with many positive new impulses.

## Sehr geehrte Kolleginnen und Kollegen,

haben Sie auch manchmal den Eindruck, dass Ihnen der ständig zunehmende Termindruck im Alltagsgeschäft vielfach nur noch wenig Raum lässt, um neue Kontakte zu knüpfen oder alte aufzufrischen, einen Blick über den eigenen Tellerrand zu werfen oder auf neue Ideen zu kommen? Um dem entgegenzuwirken laden wir Sie herzlich zur STUVA-Tagung ein! Bei diesem „Familientreffen der Tunnelbranche“ treffen Sie auf mehr als 1.800 andere hochkarätige Fachleute. Und insgesamt 65 Vorträge geben Ihnen die Gelegenheit, sich zielgenau über neueste Entwicklungen zu informieren und den eigenen Blick zu öffnen.

Nach dem großen Erfolg bei der STUVA-Tagung 2015 werden auch in diesem Jahr separate Vortragsreihen zum Tunnelbau und Tunnelbetrieb angeboten. Parallel dazu werden rund 180 Aussteller auf einer Fläche von 7.000 m<sup>2</sup> mit der STUVA-Expo eine vielseitige Messlandschaft entstehen lassen, die einen beeindruckenden Einblick in die Innovationskraft unserer Tunnelbranche bietet. Ein Highlight der STUVA-Tagung ist sicher auch wieder der Festabend: Denn ein gut gepflegtes Netzwerk gehört zu den wichtigsten Erfolgsfaktoren im Beruf und lebt vom zwanglosen Gedanken- und Erfahrungsaustausch unter Kollegen.

Das Bundesministerium für Verkehr und digitale Infrastruktur (BMVI), die Bundesanstalt für Straßenwesen (BAST) und der Deutsche Ausschuss für unterirdisches Bauen (DAUB) haben uns auch dieses Jahr erneut durch ihre ideale Mitträgerschaft das Vertrauen ausgesprochen. Wir danken herzlich für diese starke Unterstützung, die die STUVA-Tagung als herausragende Veranstaltung kennzeichnet.

Seien Sie dabei, beim größten Branchentreff weltweit! Wir sind überzeugt, dass die STUVA-Tagung auch Ihnen wieder viele positive neue Impulse geben wird.

*Martin Ziegler R. Leucker*

*Martin Ziegler R. Leucker*

## OVERVIEW STUVA CONFERENCE 2017

### Wednesday, 06/12/2017

	Lectures Tunnelling Hall C 2.1	Lectures Tunnel Operation Hall C 4 (2. Floor)	Expo Hall 4
09:00	Opening, Welcoming Addresses, Awarding STUVA Prize 2017, Keynote Lectures (Hall C 2.1)		STUVA Expo
10:30	Break		
11:15	International Major Projects	Metro/Urban Railway/ Station Operation	
13:00	Lunch Break		
14:30	BIM, Digitalisation, Monitoring	Safety in Road Tunnels	
15:45	Break		
16:30	Updates to Codes of Practice	Maintenance and Saving Energy	
	Combined Construction Methods	Road Tunnel Ventilation	
18:15			
18:30	Reception		
19:45	Festive Evening		

### Thursday, 07/12/2017

	Lectures Tunnelling Hall C 2.1	Lectures Tunnel Operation Hall C 4 (2. Floor)	Expo Hall 4
09:00	Mechanised Tunnelling	Tunnel Planning, Rehabilitation  Tunnel Doors	STUVA Expo
10:30	Break		
11:15	New Developments in Segment Linings  Ground Freezing	Rescue Concepts	
12:45	Lunch Break		
14:15	Ground Freezing  Tunnelling in Swelling Soils	Transport Tunnels and Geothermics  IT Security	
15:45	Break		
16:30	Underground Construction in the Region (Hall C 2.1)		
17:45	Closing Remarks		
18:00	End of Presentations		

### Friday, 08/12/2017

#### Technical Excursions

## Tuesday, 05/12/2017

Non-public events

Location: Parkhotel Stuttgart Messe-Airport, Echterdingen

**15:00 Board meeting (internal)**

**17:00 General assembly (particular invitation)**

**19:00 Members evening (particular invitation)**

## Wednesday, 06/12/2017

Public Conference, STUVA Expo exhibition

Location: Messe Stuttgart, ICS, Hall C 2.1, Hall 4

### 9:00 Opening

Univ.-Prof. Dr.-Ing. Martin Ziegler,  
Chairman of the Board STUVA e.V., Köln (D)

#### Welcoming Address of the State Government

Winfried Hermann, MdL, Minister for Transport of  
Baden-Wuerttemberg, Stuttgart (D)

#### Welcoming Address of the Federal Government and Keynote Lecture:

##### Efficient Implementation of Major Projects with IT-Supported Processes and Technologies

Rainer Bomba, Permanent Secretary in the Federal Ministry of  
Transport and Digital Infrastructure, Berlin (D)

#### Welcoming Address of the ITA

Prof. Tarcisio Celestino, President, International Tunnelling  
and Underground Space Association (ITA), Geneva (CH)

#### Awarding STUVA Prize 2017

#### Opening Lecture

Ronald Pofalla, Member of the Board,  
Deutsche Bahn AG, Frankfurt am Main (D)

**10:30 Break**

## LECTURES TUNNELLING

### ■ International Major Projects

**11:15 First Experience with Double Shield TBM Tunnelling on the Follo Line Project: Segment Lining, Two-component Cementitious Grout, Infiltration Wells, Pre-grouting**

Dr.-Ing. Matteo Ortu, Deputy Project Director, Acciona Ghella JV, Oslo (N) ■ Johannessen Steinar, M. Sc., Deputy Project Manager, Bane NOR, Oslo (N)

## Tuesday, 05/12/2017

Non-public events

Location: Parkhotel Stuttgart Messe-Airport, Echterdingen

**15:00 Board meeting (internal)**

**17:00 General assembly (particular invitation)**

**19:00 Members evening (particular invitation)**

## Wednesday, 06/12/2017

Public Conference, STUVA Expo exhibition

Location: Messe Stuttgart, ICS, Hall C 4 (2. Floor), Hall 4



## LECTURES TUNNEL OPERATION

### ■ Metro/Urban Railway/Station Operation

**11:15 The Impact of Urban Planning on the Design and Operation of Stations and Interchange Hubs**

Han Admiraal, Chair ITACUS – ITA Committee on Underground Space, Enprodes, Rotterdam (NL)

**11:30 Cityringen Metro in Copenhagen – Nordhavnen Branch: Project, Launching and Logistics of TBM, Conventional and Steel Fibre Segment Reinforcement, Shafts and Cross-passages**

Dr.-Ing. Frank Abel, Leiter Maschinellem Tunnelbau, Hochtief Infrastructure GmbH, Essen (D) ■ Dipl.-Ing. Andreas Köster, Head of Engineering, Metroselskabet I/S, Kopenhagen (DK)

**11:45 The Ceneri Base Tunnel: Key Aspects for Success in Changeable Ground, Risk Management, Contract Basis, Costing System**

Dipl.-Ing. ETHZ Daniele Stocker, Projektleiter, Vizepräsident ■ Dipl.-Bauing. Davide Merlini, Leiter Tunnelbau, Pini Swiss Engineers, Lugano (CH) ■ Dipl.-Ing. ETHZ Alberto Del Col, Abschnittsleiter Ceneri-Basistunnel, Alp Transit Gotthard AG, Bellinzona (CH) ■ Dipl.-Bauing. Andrea Camerotto, Projektleiter, ARGE Condotto Cossi, Rom (I)

**12:00 Construction of Ismalia Road Tunnels with Special Reference to the Problems with Clogging and Wear Effects of Soil Layers and their Solutions**

Dr. Ahmed Fouda, General Manager of Suez Canal Tunnels Project, Engineering Authority/Egyptian Army, Cairo (ET) ■ Dipl.-Ing. Hany Azer, Egyptian Government Advisor, Dortmund (D) ■ Dipl.-Ing. Michael Löffler, Geschäftsereichsleiter, CDM Smith Consult GmbH, Bochum (D) ■ Eng. Ahmed Taha, Deputy General Manager Suez Canal Tunnels Project, Engineering Authority/Egyptian Army, Cairo (ET)

**12:15 Västlänken: New Rail Line under the City Centre of Göteborg – Rock Mechanical Challenges and Solutions**

Matthias Sommer ■ Roman Gallus, Basler & Hofmann AG, Esslingen (CH) ■ Joakim Jonsson, Trafikverket, Göteborg (S)

**12:30 Semmering Base Tunnel: Construction, Deep Intermediate Shafts, TBM and Drill and Blast Tunnelling**

Dipl.-Ing. Gerhard Gobiet, Projektleiter Semmering ■ Dipl.-Ing. Gernot Nipitsch, Projektleiter Semmering ■ Dipl.-Ing. Oliver Kai Wagner, ÖBB-Infrastruktur AG, Fachreferent Tunnelbau, Graz (A)

**12:45 Question Round**

**13:00 Lunch Break**

**11:30 Modern Station Architecture and its Influence on User Behaviour**

Dipl.-Ing. Architekt Jochen Schuh, Geschäftsführer, Netzwerkarchitekten GmbH, Darmstadt (D)

**11:45 Performance Upgrading of Existing Underground Lines and Stations due to Extreme Rise in Passenger Numbers**

Ingo Wortmann, Geschäftsführer Verkehr ■ Raimund Paul, Ressortleiter Schiene, Stadtwerke München GmbH, München (D)

**12:00 Automatic Underground Railways: Findings from Operation in Nuremberg and Worldwide Developments**

Dipl.-Ing. (FH) Andreas May, Geschäftsbereichsleiter, VAG Verkehrs-Aktiengesellschaft, Nürnberg (D)

**12:15 Saving of the Energy Regained from Braking Processes in Network Outer Areas: Experience from the Cologne Tram Network**

Dipl.-Ing. Jörn Schwarze, Mitglied des Vorstandes, Kölner Verkehrs-Betriebe AG, Köln (D)

**12:30 New Findings and Measures to Improve Environmental and Climatic Protection as well as Cost-effectiveness in the Operation of New and the Upgrading of Old Underground Stations with Special Attention to the Lighting Technology**

Dipl.-Ing. Frank Steinhorst, Hamburger Hochbahn AG, Hamburg (D) ■ Dr.-Ing. Dirk Boenke, Bereichsleiter Verkehr & Umwelt, STUVA e.V., Köln (D)

**12:45 Question Round**

**13:00 Lunch Break**

## ■ BIM, Digitalisation, Monitoring

### 14:30 Sydney Metro: BIM Use for Efficient Building and Operation of the Largest Public Transport Infrastructure Project in Australia

Dipl.-Ing. Dirk Schaper, Geschäftsführer, Hochtief ViCon GmbH, Essen (D)

### 14:45 Implementation of the BIM Method on the Frankenschnellweg Road Tunnel Project: from Variant Study to Partly Automated BOQ Production

Dr.-Ing. Stefan Opheys, Schübler-Plan Ingenieurgesellschaft mbH, Nürnberg (D) ■ Dipl.-Ing. Christian Dormeier, Servicebetrieb Öffentlicher Raum Stadt Nürnberg (D) ■ Dipl.-Ing. (FH) Miriam Stallmann, M. Eng., Sweco GmbH, Frankfurt am Main (D) ■ Dipl.-Ing. Michael Richter, Schübler-Plan Ingenieurgesellschaft mbH, Frankfurt am Main (D)

### 15:00 Particular Challenges for Groundwater Management on the New Cityringen Metro in Copenhagen: Wells, Water Treatment, Monitoring, Digital Control and Forecasting

Henrik Koers, M. Sc. ■ Dipl.-Ing. (FH) Dipl.-Wirtsch.-Ing. (FH) Tim Röder, Hölscher Wasserbau GmbH, Haren (D) ■ Spyridon Latsenere, M. Sc., Copenhagen Metro Team (DK)

### 15:15 Holistic Design Process for the Construction of a Deep Excavation in the Immediate Vicinity of an Existing Underground Station: Deformation Forecasts, Building Monitoring, Countermeasures when Thresholds are Exceeded

Dr.-Ing. Steffen Kinzler ■ Dr.-Ing. Karl Morgen, Geschäftsführer, WTM Engineers GmbH, Hamburg (D)

### 15:30 Question Round

### 15:45 Break

## ■ Safety in Road Tunnels

### 14:30 Improved Tunnel Safety through a Resilient Tunnel Concept: Overcoming Incidents, Dependencies, Redundancies, Breakdown Probability, Compensation Possibilities, Maintenance Concept

Ing. André Stein, Sicherheitsbeauftragter, Ponts et Chaussées Luxemburg (L)

### 14:45 Tank Trailer Fire in the Skatestrøm Subsea Road Tunnel – Lessons Learnt and New Safety Measures

Arlid Petter Søvik, Tunnel Safety Officer, Norwegian Public Roads Administration, Statens vegvesen Vegdirektoratet, Oslo (N)

### 15:00 Application limits for Opening and Restrictions through Traffic Technology in Road Tunnels: Effects on the Frequency and Extent of Damage

Prof. Dr.-Ing. Wolfgang Baltzer, BUNG GmbH, Heidelberg (D) ■ Ltd. BDir. Dipl.-Ing. Karl-Heinz Krüger, Landesbetrieb Straßen, Brücken und Gewässer, Hamburg (D) ■ Christiana Meyer, M. Eng. ■ Torsten Brungsberg, M. Eng., BUNG Ingenieure AG, Köln (D)

### 15:15 Guaranteeing Safe Operation of the Stuttgart Road Tunnel: Upgrading Programme, Construction Sequence, Traffic Safety under Continued Operation, Future Maintenance and Renewal Measures

Dipl.-Ing. Claus-Dieter Hauck, Abteilungsleiter ■ Dipl.-Ing. Silvester Koci ■ Dipl.-Ing. Matthias Braitingner, Tiefbauamt, Stuttgart (D)

### 15:30 Question Round

### 15:45 Break



## ■ Updates to Codes of Practice

### 16:30 Abrasivity of Soft Ground and the Conflict of Test Technology and Standards: on Reliability in the Specification of Homogenous Zones

Dipl.-Ing. Martin Feinendegen, Akad. Oberrat ■ Univ.-Prof. Dr.-Ing. Martin Ziegler, RWTH Aachen University, Geotechnik im Bauwesen, Aachen (D) ■ Dr. jur. Markus Vogelheim, CBH Rechtsanwälte, Köln (D) ■ Dipl.-Ing. Lars Stock, Dr. Spang Ingenieurgesellschaft für Bauwesen, Geologie und Umwelttechnik mbH, Witten (D)

### 16:45 Properties of in-situ Aged Membranes from the Waterproofing of Road Tunnels: Material Samples, Requirements for Laboratory Tests, Revisions of Regulations

Dipl.-Ing. Ingo Kaundinya, Referatsleiter Tunnel- und Grundbau, Tunnelbetrieb, zivile Sicherheit ■ Wilhelm Decker ■ Felix Wawrzyniak, Bundesanstalt für Straßenwesen (BAST), Bergisch Gladbach (D) ■ Dipl.-Ing. Wolf-Dieter Friebe, Bundesministerium für Verkehr und digitale Infrastruktur (BMVI), Bonn (D)

## ■ Combined Construction Methods

### 17:00 The Schwarzkopf Tunnel Bypass Link: Mined Construction, Site Coordination, Active Interface Management, Protection of Inhabitants

Rainer Kraile, B. Eng., Projektleiter ■ Dr.-Ing. Stephan Engelhardt ■ Dipl.-Ing. Manfred Kicherer, Geschäftsführer, Alfred Kunz, München (D)

### 17:15 Eppenberg Tunnel: Convertible TBM for Rock and Soft Ground, Complex Requirements for the Separation, Construction of Headings and Emergency Exits

Dipl.-Ing. Manfred Börker, Wayss & Freytag Ingenieurbau AG, Frankfurt (D) ■ Dipl.-Ing. (FH) Gabriele Pagliari, SBB AG, Infrastruktur, Olten (CH) ■ Dipl.-Ing. Dr. sc. techn. Michael Hertweck, ILF Beratende Ingenieure AG, Zürich (CH)

## ■ Maintenance and Saving Energy

### 16:30 Putting the Gotthard Basis Tunnel into Operation: Planning, Implementation, Findings

Dipl.-Ing. (TH) Ralf Rüdiger, Leiter Durchführung Inbetriebsetzung, AlpTransit Gotthard AG, Luzern (CH)

### 16:45 Cooling of Service Rooms in Rail Tunnels to Increase Lifetimes and Minimise Maintenance: Optimisation Possibilities through the Example of the Koralm Tunnel

Dipl.-Ing. Dr. Helmut Steiner, ÖBB-Infrastruktur AG, Projektleitung Koralmbahn 1, Graz (A) ■ Ao. Univ.-Prof. Dipl.-Ing. Dr. Peter-Johann Sturm, TU Graz, Inst. für Verbrennungskraftmasch. und Thermodyn. – IVT, Graz (A) ■ Dipl.-Ing. Dr. Michael Bacher ■ Dipl.-Ing. Daniel Fruhwirt, Forschungsges. für Verbrennungskraftmasch. und Thermodyn. – FVT, Graz (A)

### 17:00 Working towards a Zero Energy Tunnel: Technical, Contractual and Process Solutions

Paul Janssen, M. Sc., BBA, Chairman of the Energy Reduction Committee, Netherlands Knowledge Center for Underground Space and Underground Construction (COB), Delft (NL) ■ Carolina Lantinga, M. Sc., Department of Civil Engineering TU Delft, Delft (NL) ■ Johan Naber, B. Eng., Rijkswaterstaat, Utrecht (NL) ■ Karin de Haas, B. Sc., Netherlands Knowledge Center for Underground Space and Underground Construction (COB), Delft (NL)

### 17:15 Assessment of the Energy Efficiency of Road Tunnels

Dipl. El.-Ing. ETH Urs Welte, Mitglied der Geschäftsleitung, Amstein + Walthert Progress AG, Zürich (CH)



**17:30 Oberau Road Tunnel: Blasting and Excavator Tunnelling, Compensation Grouting, Special Measures for the Disposal of Thallium-Contaminated Excavated Material**

Prof. Dr.-Ing Manfred Keuser, Geschäftsführender Gesellschafter, BUNG Ingenieure GmbH, München (D) ■ Prof. Dipl.-Ing. Karl Goj, Sachgebietsleiter Brücken- und Tunnelbau, Oberste Baubehörde im Bayerischen Staatsministerium des Innern, München (D) ■ Dipl.-Ing. Stefan Geuder, Sachgebietsleiter, Autobahndirektion Südbayern, München (D) ■ Dipl.-Ing. Sebastian Schwaiger, Geschäftsführer, Planungsgemeinschaft Müller & Hereth/EDR, Freilassing (D)

**17:45 Caverns at the Visp South Bypass Road Tunnel: Derivation of General Recommendations for Risk Minimisation in the Face of great Uncertainties about the Forecast Rock Mass Behaviour**

Dr. sc. techn. Dipl.-Bauing. ETHZ Alex Schneider, Geschäftsleiter ■ M. Sc. Bauing. ETHZ Simon Tanner, Geschäftsleiter ■ MSc. Bauing. ETHZ Nikolaos Lavdas, Rothpletz, Lienhard + Cie. AG, Olten/Zürich (CH)

**18:00 Question Round**

**18:15 End of Presentations**

**18:30 Reception**

**19:45 Festive Evening with a cabaret performance by Christian Ude, the former lord mayor of Munich**

**Thursday, 07/12/2017**

■ **Mechanised Tunnelling**

**9:00 Innovative Hybrid Shield Application in Rio de Janeiro: EPB Machine with Alternative Conveyor/Pump Mucking, Separation Plant on the Backup, Innovative Conditioning Concept**

Dr.-Ing. Ulrich Maidl, Geschäftsführer, Maidl Tunnelconsultants GmbH & Co.KG, Duisburg (D) ■ Alexandre Mahfuz Monteiro, TBM Manager, Consórcio Linha 4 Sul, Rio de Janeiro (BR) ■ Civil Engineer Marc Comulada, M. Sc., Head of International Projects, Maidl Tunnelconsultants GmbH & Co.KG, München (D) ■ John Foster, Director, Mechanised Tunnelling Services Limited, Derbyshire (UK)

**9:15 Gas Pipeline Replacement Project Humber Crossing: Tunnelling with Slurry TBM, Tunnelling Technology, Health & Safety, Installation of the Gas Pipeline**

Dipl.-Ing. Stephan Assenmacher, Projektleiter ■ Dipl.-Ing. Peter Jakobs, Area Manager, Porr Deutschland GmbH, Tunnelbau, Düsseldorf (D)

■ **Road Tunnel Ventilation**

**17:30 Central-Wan Chai Bypass Road Tunnel, Hong Kong: Environmentally Gentle Ventilation with Air Filter Plant – Construction and Function of the Air Filters, Operational Safety, Costs**

Dr.-Ing. Elke Deux, Geschäftsführerin ■ Dipl.-Ing. Gerd Johannemann ■ Dr. rer. pol. Karl Dickels, Geschäftsführender Gesellschafter, Filtrontec GmbH, Starnberg/Bitterfeld-Wolfen (D) ■ N. N., Leighton Joint Venture (LJV), Hong Kong, (CHN)

**17:45 Tunnel Ventilation Dampers: Experiences, Durability and Corrosion Resistance, Testing Against High Temperatures**

Balamugilan Balakrishnan, M. Sc. Eng. ■ Mech. Eng. Ronny Sachse, Trox GmbH, Neukirchen-Vluyn (D)

**18:00 Question Round**

**18:15 End of Presentations**

**18:30 Reception**

**19:45 Festive Evening with a cabaret performance by Christian Ude, the former lord mayor of Munich**

**Thursday, 07/12/2017**

■ **Tunnel Planning, Rehabilitation**

**9:00 Methods of Systems Engineering on Complex Tunnel Projects: First Applications and Experience with Practical Examples**

Katharina Kollenda, M. Sc. ■ Sebastian Rösler, M. Eng., Rücker + Schindele Beratende Ingenieure GmbH, München (D)

**9:15 Delayed Repair of Transport Tunnels against the Background of the Economical Use of Finance and Scarce Personnel Resources – 2017 Annual Report of the STUVA Working Group**

Dipl.-Ing. Michael Schlebusch, Geschäftsführer, gbm Gesellschaft für Baugeologie und -meßtechnik mbH – Baugrundinstitut, Limburg/Lahn (D) ■ Dipl.-Ing. Manfred Eder, Geschäftsführer, Ingenieurbüro Laabmayr & Partner ZT GesmbH, Salzburg (A) ■ Prof. Dr.-Ing. Alfred Haack, STUVAtec GmbH, Köln (D)



**9:30 Special Contractual and Technical Features of Large-scale TBM Drives in Soft Ground in Miami and Seattle**

Dipl.-Ing. Rene Reichl, Babendererde Engineers LLC, Seattle (USA)

**9:45 New Methods of Forecasting the Dispersion of Fines in a Support Fluid in Mechanised Tunnelling**

Dipl.-Ing. Thorsten Weiner, Porr Deutschland GmbH Tunnelbau, Düsseldorf (D) ■ Prof. Dr.-Ing. Markus Thewes, Lehrstuhl für Tunnelbau, Leitungsbau und Baubetrieb, Ruhr-Universität Bochum (D)

**10:00 Comparison of Variable Tunnelling and Machine Concepts on the new Long-Distance Line from Wendlingen to Ulm: Multimode and EPB Machines, Tunnelling Experience**

Dr.-Ing. Gerhard Wehrmeyer, Bereichsleiter Traffic Tunnelling, Herrenknecht AG, Schwanau (D)

**10:15 Question Round****10:30 Break****■ New Developments in Segment Linings****11:15 Metro Tunnelling in Singapore – Thomson Line: Design of Bored Tunnels, Segment Design, Undercrossings, Interchange Stations**

Dipl.-Ing. Andreas Raedle, Tunnel Leader, Arup, Singapore ■ Ramesh Nair, Land Transport Authority (LTA), Thomson Line Package D, Deputy Manager Tunnels, Singapore ■ Carlos Acosta, Land Transport Authority (LTA), Thomson Line Package D, Project Manager Tunnels, Singapore

**11:30 Steel Fibre Reinforced Concrete for Tunnel Lining Segments – Design, Durability Aspects and Case Studies on Contemporary Projects**

Carola Edvardson, Technical Director, COWI A/S, Kongens Lyngby (DK) ■ Dipl.-Ing. Stephan Müller, KrampeHarex GmbH & Co.KG., Hamm (D) ■ Dipl.-Ing. Wilhelm Nell, ArcelorMittal, Bissen (L) ■ Dipl.-Ing. Martin Eberli, Bekaert Maccaferri Underground Solutions BVBA, Aalst-Erembo-degem (B)

**9:30 Surveying and Assessment of Refurbishment Measures and Necessary Upgrading for Stations and Tunnels, Concentrating on Structural Condition, Accessibility and Fire Protection**

Dipl.-Ing. Daniel Hahne, Bereichsleiter Brandschutz & Sicherheit, STUVAtec GmbH, Köln (D) ■ Dr.-Ing. Dirk Boenke, Bereichsleiter Verkehr & Umwelt, STUVA e. V., Köln (D)

**■ Tunnel Doors****9:45 Tunnel Doors: Accidents, Hazards, Technical Solutions, Escape Behaviour**

Dipl.-Ing. Christian Nutrice, Elkuch Bator, Benden (FL) ■ Dr. Marco Bettelini, Amberg Engineering, Leiter Geschäftsbereich Lüftung und Sicherheit, Regensdorf-Watt (CH)

**10:00 Construction Dynamical Analyses in the Development of Tunnel Doors for the ÖBB: Simulation Calculations of Pressure and Suction Loading, Impact Spectra, Resonance Frequencies, Fatigue Design**

Dipl.-Ing. Dr. Hannes Kari, ÖBB-Infrastruktur AG, Wien (A) ■ Dipl.-Ing. Dr. Helmut Steiner, ÖBB-Infrastruktur AG, Projektleitung Koralmbahn 1, Graz (A) ■ Dipl.-Ing. Dr. Michael Reiterer, Revotec ZT GmbH, Wien (A)

**10:15 Question Round****10:30 Break****■ Rescue Concepts****11:15 Fehmarnbelt Fixed Link: Safety Concepts and Strategies for a Combined Road and Railway Tunnel – Legal Aspects, Ventilation Concept, User Safety, Accessibility for Emergency Services, Evacuation Scenarios**

Kim Smedegaard Andersen, Technical Deputy Director, Femern A/S, Kopenhagen (DK) ■ Prof. Dr.-Ing Wolfgang Baltzer, BUNG GmbH, Heidelberg (D)

**11:30 Representation of Human Behaviour in Risk Models for Tunnel Fires: Validation of Relevant Input Parameters Based on Tests with People**

Dipl.-Ing. Bernhard Kohl, Niederlassungsleiter ILF Linz, ILF Consulting Engineers Austria GmbH, Linz (A) ■ Dipl.-Wirt.-Ing. Anne Lehan, Bundesanstalt für Straßenwesen (BASt), Bergisch Gladbach (D)

**11:45 New Development of a Single-layer Drained Segment Construction with Waterproof Grouting of the Annular Gap: Construction Materials Technology, Constructional Aspects**

Dr.-Ing. Christian Thienert, Bereichsleiter Tunnelbau & Bautechnik, STUVA e.V., Köln (D) ■ Dipl.-Ing. Dennis Edelhoff, IMM Maidl & Maidl GmbH & Co. KG, Bochum (D) ■ Dipl.-Min. Eugen Kleen, Leiter Forschung & Entwicklung Mineralische Baustoffe und Betonzusatzmittel, MC-Bau-chemie Müller GmbH & Co. KG, Bottrop (D) ■ Ing. Norbert Hörlein, Projektleiter, Porr Bau GmbH, Wien (A)

■ **Ground Freezing**

**12:00 Rastatt Tunnel: Ground Freezing Measures in Connection with TBM Drives and Cross-passages; Structural and Thermal Design**

Dr.-Ing. Heiko Neher, Ed. Züblin AG, Zentrale Technik, Tunnelbau, Stuttgart (D) ■ Dipl.-Ing. Marc Kemmler, M. Eng., ARGE Tunnel Rastatt, Ed. Züblin AG, Direktion Tunnelbau, Stuttgart (D) ■ Dipl.-Ing. Thomas Grundhoff, Grundhoff GmbH, Neuss (D) ■ Dipl.-Ing. Jürgen Kölmel, DB Netz AG, Großprojekt Karlsruhe-Basel StA 1, Karlsruhe (D)

**12:15 Emscher Sewer Tunnel: Special Features of the Construction of the Sealing Block using the Ground Freezing Process and Start of the 1800 dia. Pipe Jack from the Existing Construction Excavation**

Dipl.-Ing Peter Schäfers, Projektmanager, CDM Smith Consult GmbH, Bochum (D) ■ Dipl.-Geol. Markus Kühnel, Gruppenleiter Geschäftsbereich Planung und Bau, Emscher-genossenschaft/Lippeverband, Essen (D) ■ Dipl.-Ing. Klaus Lenfort, Betriebsleiter und Prokurist, Kramer Bauunternehmung GmbH + Co KG, Dortmund (D) ■ Dipl.-Ing. Reiner Otterbein, Niederlassungsleiter, Keller Grundbau GmbH, Bochum (D)

**12:30 Question Round**

**12:45 Lunch Break**

**11:45 Tunnel Fire in Heinenoord Road Tunnel, The Netherlands: Safety Installations Response and Human Behaviour**

Prof. Johan Bosch, M. Sc. ■ Mark Goudzwaard, BBA, Rijkswaterstaat, Utrecht/Rotterdam (NL)

**12:00 Accessible Escape from Tunnels According to BOStrab: Risk Analysis, Microscopic 3D Escape and Evacuation Simulation, Cost-effectiveness Conditions, Recommendations for Action**

Dr.-Ing. Georg Mayer, PTV Transport Consult GmbH, Stuttgart (D) ■ Dr.-Ing. Lars Röchter ■ Dipl.-Ing. Franz-Hubertus Beck, Abteilungsleiter, Ing.-Büro Dipl.-Ing. H. Vössing GmbH, Düsseldorf (D) ■ Dipl.-Ing. Jens Elger, Institut für Bahntechnik GmbH, Dresden (D)

**12:15 The Effects of Electromobility on Escape and Rescue from Tunnels**

Frank Steiner, Geschäftsführer, SW Ingenieurbüro Brandschutz GmbH, Ichtershausen (D)

**12:30 Question Round**

**12:45 Lunch Break**



- 14:15 U5 Berlin: Dismantling of two TBMs under the Protection of Ground Freezing – Challenges and Technical Solutions at the Junction of Heat and Cold**  
Dipl.-Ing. Jens Classen ■ Dipl.-Ing. Peter Diете, Implenia Construction GmbH, München (D) ■ Dipl.-Ing. Peter Hoppe, Projektleiter, Implenia Construction GmbH, Berlin (D) ■ Dipl.-Geologe Jörg Seegers, Technischer Geschäftsführer, Projektrealisierungs GmbH U5, Berlin (D)
- 14:30 New Albula Tunnel II: Experience from the Construction of the Old Tunnel; Variant Study Refurbishment vs. New Construction, Freezing Process**  
Daniela Herzig, M. Sc. ETH Bau-Ing., Gähler und Partner AG, Ennetbaden (CH) ■ Dipl.-Bauing. (FH) Louis Schönenberger, Mitglied der Geschäftsleitung, Amberg Engineering AG, Chur (CH) ■ Pascal Zwicker, M. Sc. ETH Bau-Ing., Rothpletz Lienhard + Cie AG, Zürich (CH)

## ■ Tunnelling in Swelling Soils

- 14:45 Gotschna Tunnel: Remediation of Swelling Heave in an Existing Road Tunnel – Concept, Measures, Material Requirements**  
Dipl.-Bauing. ETH Patrick Beeler, Lombardi AG, Luzern (CH) ■ Dipl.-Bauing. ETH Beat Schädler, Aegerter & Bosshardt AG, Basel (CH) ■ Reto Weishaupt, M. Sc. Bau-Ing. ETH Lombardi AG, Luzern (CH) ■ Dipl.-Bauing. ETH/SIA Flavio Chiaverio, Aegerter & Bosshardt AG, Basel (CH)
- 15:00 Third Belchen Tunnel Bore: New Solutions for Tunnelling and Construction of Tunnel in Heavily Swelling Rock mass – Model Approaches, Concrete Mixes, Coatings, Seepage Slots**  
Dipl.-Bauing. ETH/SIA Flavio Chiaverio, A. Aegerter & Dr. O. Bosshardt AG, Basel (CH) ■ Dipl.-Bauing. ETH/SIA Ulrich Straumann, Emch + Berger AG, Bern (CH) ■ Dipl.-Bauing. (FH) Sebastian Böheim, ILF Beratende Ingenieure AG, Zürich (CH) ■ Dipl.-Bauing. (FH) Sergio Massignani, Marti Tunnelbau AG, Moosseedorf (CH)
- 15:15 Stuttgart 21 – More than 15 km of Tunnel in Anhydrite: Special Measures to Overcome the Swelling Problem and Experience of Construction**  
Prof. Dr.-Ing. Walter Wittke, Geschäftsführer ■ Dr.-Ing. Martin Wittke, Geschäftsführer, WBI GmbH, Weinheim (D) ■ Dipl.-Ing. Günther Osthoff, Projektleiter Technik PFA 1.2/1.6 ■ Dipl.-Ing. Christof Lienhart, Projektleiter Technik PFA 1.5, DB Stuttgart-Ulm GmbH, Stuttgart (D)

- 15:30 Question Round**  
**15:45 Break**

## ■ Transport Tunnels and Geothermics

- 14:15 Web-based Simulation Application for the Investigation of the Cost-effectiveness of Thermally Activated Tunnels: Calculation Constraints, Sensitivity Analyses, Results of Parameter Studies, Recommendations**  
Dipl.-Ing. Patrik Buhmann ■ Univ.-Prof. Dr.-Ing. habil. Christian Moormann, Institut für Geotechnik, Universität Stuttgart (D)
- 14:30 Rosenstein Road Tunnel: Exploitation of Waste Heat from the Operations Centre in Combination with Geothermal Energy for the Air-Conditioning of Buildings and Water Pools of the Wilhelma Zoological and Botanical Gardens**  
Dipl.-Ing. Christian Buch, Tiefbauamt, Stuttgart (D) ■ Dr.-Ing. Claus Erichsen, Geschäftsführung, WBI GmbH, Weinheim (D)

- 14:45 Selection of a Main Road Tunnel for Geothermal Groundwater Exploitation**

Dipl.-Ing. Jürgen Blossfeld, Bundesanstalt für Straßenwesen (BAST), Bergisch Gladbach (D) ■ Dipl.-Ing. Patrik Buhmann, Institut für Geotechnik, Universität Stuttgart (D)

## ■ IT Security

- 15:00 Digital Video Technology for the surveillance of Road Tunnels: Data Protection and IT Security, Future Developments**

Dipl.-Ing. Thomas Noack, Rücker + Schindele Beratende Ingenieure GmbH, Berlin (D) ■ Walter Jäger, Autobahndirektion Nordbayern, Nürnberg (D)

- 15:15 Improvement of the Cyber Security of Tunnel Control Centres: Potential Threats, Analysis of the Existing Situation, Penetration Tests, Guideline, Analysis Software**

Dr.-Ing. Selcuk Nisancioglu ■ Dr.-Ing. Kalliopi Anastassiadou, Bundesanstalt für Straßenwesen (BAST), Bergisch Gladbach (D) ■ Dipl.-Math. Kai Jacobsen, Niederlassungsleiter, Dürr Group GmbH, Kiel (D) ■ Dr.-Ing. Christian Thienert, Bereichsleiter Tunnelbau & Bautechnik, STUVA e.V., Köln (D)

- 15:30 Question Round**  
**15:45 End of Presentations about Tunnel Operation**

## ■ Underground Construction in the Region

### 16:30 Combined Solution in Karlsruhe: Mined Tunnelling by the Shotcrete Method with Waterproofing against Pressure in Pre-improved Soft Ground

Dipl.-Ing. (TU) Frank Nenninger, Prokurist und Projektleiter Technik, Karlsruher Schieneninfrastruktur-Gesellschaft mbH (KASIG), Karlsruhe (D) ■ Dipl.-Ing. Geol. (TU) Markus Feneberg, Feneberg Consult, Kirchseeon (D) ■ Dipl.-Ing. Thomas Wechner, B. Sc., BeMo Tunnelling GmbH, Innsbruck (A)

### 16:45 Major Project Stuttgart–Ulm, Alabastertunnel in Karst Rock Mass: Karst Investigation during Tunnelling, Conclusions for Design and Construction, Fire Design

Prof. Dr.-Ing. Frank Könemann, geoteam Ingenieurgesellschaft mbH, Dortmund (D) ■ Dr.-Ing. Stefan Kielbassa, DB Projekt Stuttgart–Ulm GmbH, Stuttgart (D) ■ Dr. Klaus-Dieter Höwing, DHB Beraten & Planen GbR, Westheim (D) ■ Dipl.-Ing. Matthias Abele, Ed. Züblin AG, Stuttgart (D)

### 17:00 Special Features of the New Building of the Station Staatsgalerie in Stuttgart due to the Partial Support above the main Station: Structure, Foundations, 3D Design, Settlement Considerations

Dipl.-Ing. Angelika Schmid, Prokuristin, Werner Sobek Stuttgart AG, Stuttgart (D) ■ Dipl.-Ing. Christoph Holzinger, Projektleiter, Werner Sobek Stuttgart AG, Stuttgart (D) ■ Dipl.-Ing. Bernd Schröder, Dienststellenleiter Stadtbahnplanung, Tiefbauamt, Stuttgart (D)

### 17:15 Tests on Non-Standard Waterstops to Gain an Individual Approval

Dr.-Ing. Roland Leucker, Geschäftsführer, STUVA e.V., Köln (D) ■ Dipl.-Ing. Dominik Kessler, STUVAtec GmbH, Köln (D)

### 17:30 Question Round

### 17:45 Closing Remarks

Univ.-Prof. Dr.-Ing. Martin Ziegler, Vorsitzender des Vorstandes STUVA e.V., Köln (D)

### 18:00 End of Presentations



## Scientific Committee

### Prof. Dr.-Ing. Wolfgang Baltzer

BUNG GmbH, Heidelberg <sup>2)</sup>

### Klaus Eismann

OSMO-Anlagenbau GmbH & Co. KG, Georgsmarienhütte <sup>2)</sup>

### Dr.-Ing. Stefan Franz

DEGES Deutsche Einheit Fernstraßenplanungs- und -bau GmbH <sup>1)</sup>

### Prof. Dr.-Ing. Dr.-Ing. E. h. Günter Girnau

STUVA e.V., Köln <sup>1), 2)</sup>

### Prof. Dr.-Ing. Alfred Haack

STUVA e.V., Köln <sup>1)</sup>

### DirProf Dr.-Ing. Jürgen Krieger

Bundesanstalt für Straßenwesen (BASt), Bergisch Gladbach <sup>2)</sup>

### Dr.-Ing. Roland Leucker

STUVA e.V., Köln <sup>1), 2)</sup>

### Prof. Dr.-Ing. Gero Marzahn

Bundesministerium für Verkehr und digitale Infrastruktur, Bonn <sup>2)</sup>

### Dr.-Ing. Wolfgang Rauscher

EDR GmbH, München <sup>1)</sup>

### Dr.-Ing. Klaus Rieker

Wayss & Freytag Ingenieurbau AG, Frankfurt am Main <sup>1)</sup>

### Univ.-Prof. Dr.-Ing. Martin Ziegler

RWTH Aachen University, Geotechnik im Bauwesen, Aachen <sup>1), 2)</sup>

<sup>1)</sup> for Segment Tunelling

<sup>2)</sup> for Segment Tunnel Operation

## EXCURSIONS

### Friday, 08/12/2017

The participants at our Conference are cordially invited to take part in one of the excursions. The excursions on Dec. 8 are offered parallel to one another. As a result it is only possible to participate in one such trip. The number of participants for each excursion is limited. Reservations are accepted on a first-come, first-served basis. A reservation can be made within the online registration and must be confirmed by December 6 in the afternoon at the registration desk for excursions in Stuttgart. Further details (meeting point, sequence, timetables etc.) will be provided within the reservation confirmation in Stuttgart. We reserve the right to make changes. Unless otherwise specified all excursions on this particular day will commence between 8.00 and 10.00 am and end between 12 noon and 1.00 p.m.

## Specialist Visits to the Stuttgart-Ulm Railway Project

The Stuttgart-Ulm railway project includes the project parts S21, the rearrangement of the Stuttgart rail node, and the new line from Wendlingen to Ulm. It will provide altogether 117 km of new lines, 57 km for S21 and 60 km for the new line, and half of each will run in tunnels (33 km and 30.4 km). The construction project is part of the "Main Line for Europe" project, the high-speed connection between Paris and Budapest/Bratislava which has been given high priority by the EU. A central part of S21 is the rearrangement of the existing terminus station into a through station below ground. The area of about 100 ha of tracks that will no longer be needed will become two new city quarters. A high-capacity scheme for regional public transport will be implemented through various individual measures. When complete, trains on the new line from Wendlingen to Ulm will travel at up to 250 km/h, reducing journey times from Stuttgart to Ulm by about 30 minutes to half the current time. At the same time, the new long-distance stations at the airport and trade fair will reduce changing times for long-distance passengers.

The excursions on offer will take you to construction sites on both project parts. The emphasis is on mechanised tunnelling, conventional tunnelling and building.

### A: Filder Tunnel\*

### B: Albvorland Tunnel\*

### C: Boßler Tunnel\*

**D: Ober-/Untertürkheim Tunnel** viewing the conventional tunnelling

### E: Cannstatt Tunnel and

**F: Alabstiegs Tunnel** viewing the installation of the inner lining

**G: Steinbühl Tunnel** viewing the installation of railway equipment and permanent way

### H: Filstal Bridge

**J: New main station** viewing the building works with the columns with widely splayed heads

You can find more details on the above-mentioned specialist visits following [www.stuva-conference.com](http://www.stuva-conference.com).

\* in each case including viewing the tunnel boring machine (TBM)

**Important: Due to the applicable safety regulations, only a restricted number of people can be permitted to visit the TBM. Please only register for these visits if you are certain to take part. The registration deadline is 20 November 2017!**

## ■ Excursions in the Stuttgart Area

### K: Relocation of the Staatsgalerie Urban Transit Station

In the course of the infrastructure project Stuttgart–Ulm, the new location of the main station means that the urban transit station “Staatsgalerie” has to be moved in location and level. The approach and departure tunnels have to be rebuilt in cut-and-cover or partially newly built, which demands a staged reorganisation of the urban transit network as well as traffic diversion of the multi-lane, heavily used roads. Construction activities are taking place in three areas. In the area Willy-Brandt-Straße/B14 next to the Interior Ministry and the Hotel Le Meridien, the tunnel junction to the existing network of the Stuttgart urban transit in the direction of the Neckar-tor is under construction. In front of the Planetarium, structural works have started for the new Staatsgalerie station. As with the new main station, this structure will also be constructed for design purposes in white concrete. Another construction site is in the Schillerstraße, directly in front of the Königin-Katharina-Stift Gymnasium, where the tunnel sections and junctions to the main station and the Charlottenplatz are being constructed

*Guiding is only available in German*

### L: Rosenstein Tunnel Roadbuilding Project

The Rosenstein Tunnel roadbuilding project is the largest transport infrastructure project of the capital city of Stuttgart. With the project parts B10 Rosenstein Tunnel and the B10/B14 connection at the Leuze Mineralbad, the construction works fill the gap in upgrading the federal main road B10 between the Pragsattel and Stuttgart-Ost. The separation of the traffic flows of the B10 and B14 is the main intention of the design of the connection at the Leuze Mineralbad. With a total length of about 1,300 m, the B10 Rosenstein Tunnel is the key structure. The tunnel passes beneath the Rosensteinpark and parts of the Zoological-Botanical Gardens of the Wilhelma. Simply the maintenance of the traffic volume of up to 170,000 vehicles per day is a great challenge for construction planning and site logistics.

*Guiding is only available in German*

### M: Improving Safety Standards in the Heselach Road Tunnel

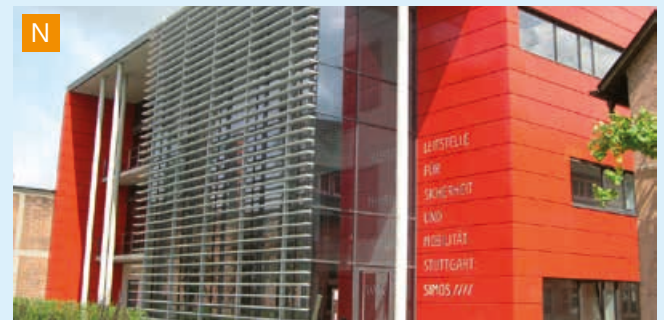
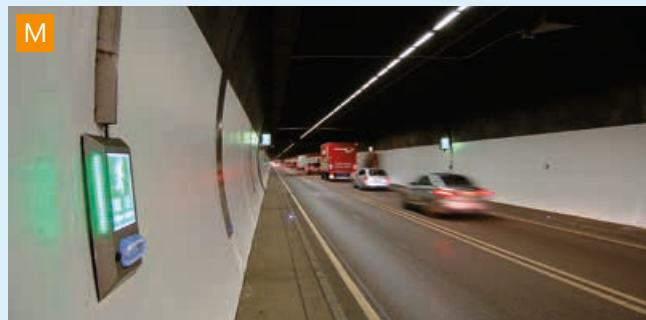
The Heselach Tunnel in the south of Stuttgart is one of the busiest 2-way transport tunnels in Europe – having to cope with around 50,000 vehicles/day. With a length of 2.3 km it is Stuttgart’s longest road tunnel. Due to the update of the “Guidelines for Equipment and Operation of Road Tunnels” (RABT 2006) the Heselach tunnel also had to be retrofitted technically to comply with safety standards. Towards this end, the city has invested € 30 million between 2004 and 2012: a further evacuation tunnel was built, an existing one extended, the emergency footpaths are now provided with an optical guidance device. Most recently the ventilation system was converted to provide more effective smoke removal. An automatic fire alarm system as well as modern radio equipment for the emergency services also contributes to making the tunnel even safer. The entire control and measurement technology system was renewed.

*Guiding is only available in German*

### N: The Integrated Traffic Control Centre Stuttgart

Stuttgart is at the centre of an economically dynamic region with high, future rising traffic frequencies. Mobility is recognised as an important location factor, the traffic infrastructure of the city and its environs can however scarcely be extended on account of topographical factors. An ever greater number of users must share what is already a limited traffic area. Since 2006, the Integrated Traffic Control Centre (IVLZ) has catered for a traffic management system coordinating all forms of transport. Four partner organisations collate extensive data on the traffic situation in Stuttgart: the Office for Public Order and the Civil Engineering Office of the City of Stuttgart, the Public Transport Operator and Stuttgart’s Police Headquarters. All these data come together in the IVLZ and are then evaluated. Subsequently traffic can be actively influenced by dynamic information panels, park guidance systems or operating traffic lights on a flexible basis. The visit provides detailed insight in the organisation of the IVLZ.

*Guiding is only available in German*



### O: Karlsruhe Combined Solution

The inner-city project of a century "Kombilösung Karlsruhe" (combined solution) consists of two project parts. On the one hand, the public transport tunnel to be mechanically bored under the main shopping centre, with a mined tunnel under compressed air and cut-and-cover tunnel sections, and on the other hand the replanning of the Kriegsstraße with a road tunnel.

The technically very challenging public transport tunnel has a length of about 2.4 km and links in a west-east direction four underground stations with two ramps each about 0.4 km long. A north-south section branches off below ground, linking a further three underground stations and a 0.4 km long ramp. The seven stations have been built top-down while maintaining public life. The excursion shows the structurally complete underground stations, the tunnels and the combi-structure of three crossing transport routes.

*Guiding is only available in German*

**Important: This tour is not within the usual time frame. The sites of the Combined Solution are 86 km away from the Stuttgart Trade Fair what means more than 1,5 hours for the journey there. The length of stay is planned for 3 hours. Please consider this in your itinerary.**

### P: Rastatt Tunnel

The Rastatt Tunnel is part of the line being upgraded and newly built from Karlsruhe to Basel for the DB Netz AG. It passes beneath the entire city area of Rastatt as well as the low-lying Federbach lowland with a length of 4,270 m (incl. cut-and-cover tunnel) and consists of two single-track bores with circular sections and single-pass segment linings. The 3,891 m long west bore and the 4,029 m long east bore are being bored by two TBMs. The inside diameter of

the completed tunnel is 9.60 m. Due to the very shallow cover in some places and the location of the tunnel in the groundwater, several ground freezing measures are being used for the construction of the tunnels and the cross passages. The Rastatt Tunnel is the largest Building Information Modeling (BIM) pilot project in Germany sponsored by the Federal Ministry of Transport and Digital Infrastructure (BMVI). When the visit takes place, the TBM drives will have been completed and the structural works will be continued in the cut-and-cover sections.

*Guiding is only available in German*

**Important: this excursion will take place outside the normal timeframe. The Rastatt Tunnel is about 95 km away from the Messe Stuttgart, resulting in a travel time of more than 1.5 hours. We then plan to be on site for 3 to 4 hours. Please take this into account in the planning of your journey.**

### Q: The Mercedes-Benz Automotive Plant in Sindelfingen

The visit to the world's largest Daimler AG production plant affords a detailed insight into the fascinating world of motorcar manufacturing: starting with the pressing shop, where the first parts are shaped by way of the ballet provided by the robots at the bodyshell stage right up to the marriage of chassis and drive section in the assembly areas. In the logistics "supermarket" you can see how vehicle parts are prepared to be moved on to the assembly lines – by "Willi" and "Mercedes" for instance, 2 automatic transport systems. The tour will be conducted in German and English.

*Guiding is available in German and English*

**Important: you can register for this tour by October 25, 2017 at the latest.**



## R: Plant Visit of Herrenknecht AG in Schwanau

Since 1977 the headquarters of Herrenknecht – one of the largest and most innovative manufacturers in the area of mechanized tunnelling systems – is located in Schwanau, Germany. To date, this is the main location accommodating design, component manufacturing and assembly facilities. On an area of approximately 300,000 sqm, 15 large diameter machines ( $\varnothing > 6\text{m}$ ) can be assembled simultaneously. Within a site visit, you will be provided with an overview about the company's history and recent projects. In the subsequent guided tour around the plant you gain an insight into the assembling of tunnel boring machines for the construction of traffic as well as supply and disposal infrastructures.

*Guiding is available in German and English.*

**Important: This tour is not within the usual time frame. The site is 160 km away from the ICS what means more than 2 hours for the journey there. The length of stay is planned for 3 to 4 hours. Please consider this in your itinerary.**



## ■ Conditions of Participation

### 1. Registration

Registration for STUVA'17 Conference should be done online at [www.stuva-conference.com](http://www.stuva-conference.com). The participant will receive a registration confirmation and an invoice by e-mail after his successful registration. November 24, 2017 is the deadline for online registration. Afterwards the registration must be made on spot with additional costs. To be mentioned in the printed list of participants the registration must be made by Nov. 10, 2017 at the latest. During the registration the naming in the list of participants can be refused.

### 2. Conference Fees

The purchase of a ticket entitles both to attend lectures on tunnel construction and on tunnel operation. Participants will be charged the following fees for attending the conference (free of VAT under Article 4 no. 22a of the German Sales Tax Act, UStG):

Category	Early Bird until 30.09.2017 <sup>(1)</sup>	Regular from 01.10.2017 <sup>(1)</sup>
Members of STUVA <sup>(2)</sup>	€ 390	€ 440
Non-members	€ 490	€ 540
Students <sup>(3)</sup>	€ 50	€ 50
Festive Evening drinks and dinner incl. incl. VAT	€ 75	€ 75

(1) Registration received by STUVA; an additional € 30 will be levied if registration is effected on the spot in the conference office.

(2) Only employees of STUVA members will qualify for the preferential rate listed above. Where this reduction is unjustifiably obtained, we reserve the right to claim the difference. We grant a 10 % discount on the conference fees to members registering more than 15 participants, from the 16th registrant upwards.

(3) A copy of the student's ID has to be submitted.

Specialized press representatives can apply to attend all lectures presented at the STUVA Conference and the STUVA Expo by showing press card (only one person per publication/station).

The conference fees include:

- one conference kit including the conference proceedings
- attendance in all lectures at the conference, Tunnel Construction as well as Tunnel Operation, with simultaneous interpretation German/English and English/German
- access to the exhibition held in conjunction with the conference
- participation in one of the technical excursions
- coffee, tea and water during breaks in the conference proceedings
- a travel pass for Stuttgart's public transport network, valid for the duration of the conference

The conference fee covers the full 2-day series of lectures. Tickets for individual sessions or one-day tickets are not available.



### 3. Festive Evening

On December 6 STUVA will be hosting a festive evening which all conference participants are invited to attend. The event will take place at the ICS, starting at 7.45 p.m. (reception starts at 6.30), and will include a convivial dinner, drinks and some programme. Each participant's share of the associated costs will total € 75, incl. VAT.

### 4. Cancellation and Reimbursement

The STUVA office must be notified of any cancellations in writing (i.e. by mail or fax). A fee of € 60 (free of VAT) will be charged for any notification of cancellation received by 10 November 2017 at the latest. Participants submitting notice of cancellation after this date or failing to show up for the conference will be charged the full fee. However, any registered participant may be replaced – once only, free of charge until 10 November 2017 – by a proxy.

### 5. Issuing Tickets for Admission to the Conference

Tickets for admission to the conference will be mailed to those participants based in Europe (EU and EEA member states and Switzerland). Tickets for anyone whose payment was received by STUVA after 12 November 2017 will be held for them at the conference office to be picked up upon arrival. For organisational reasons, all tickets for participants from outside Europe will be held for them at the conference office instead of being mailed. This arrangement will apply irrespectively of when their payment was received. Students must collect their tickets at the conference office and confirm their status with a valid student ID.

### 6. Liability and Compensation

Should the conference be disrupted or even prevented from taking place altogether as a result of unforeseen political events, industrial action or force majeure, the organisers shall not be liable to pay any compensation. Furthermore, the organisers deny liability for any personal loss by or injury to participants during the event.

## General Notes

### STUVA Forum for Young Engineering Professionals

On December 6, 2017 the new STUVA Forum for Young employees from the tunnel sector meets for the first time. For more information please visit [www.stuva-tagung.de/tagung/STUVA-YEP](http://www.stuva-tagung.de/tagung/STUVA-YEP) and be there!

#### Conference Kit

The conference kit will be handed out at the East entrance area of Messe Stuttgart. Additional copies of the conference proceedings can be bought at the conference office at a price of € 50 per copy (incl. VAT).

#### Conference Language

The conference language is German and English. All lectures will be simultaneously interpreted German/English and English/German.

#### Conference Office

During the conference you will find the conference office at the East entrance area of Messe Stuttgart. You can contact the office by phone +49 221 59795-38 or by e-mail [team@stuva-conference.com](mailto:team@stuva-conference.com).

#### Public transport Travel Pass

The conference badge is as well a travel pass for Stuttgart's public transport network. The travel pass is valid from 05/12/2017 to 08/12/2017 for travels within the city area (all tariff zones).

#### Accommodation

Hotel reservations have to be done by the participants (STUVA does not act as an agency). Please contact Stuttgart Tourismus GmbH (+49 711 22280, [www.stuttgart-tourist.de](http://www.stuttgart-tourist.de)).

#### Acceptance by Chambers of Engineers

Our Conference is formally recognized by a number of chambers for engineers and architects in Germany as professional training in further education. Read further details on [www.stuva-conference.com](http://www.stuva-conference.com).

#### Recent Information

For the latest news and recent information about the conference please visit our website at [www.stuva-conference.com](http://www.stuva-conference.com).

## STUVA-Expo

Featuring annually increasing growth rates, the accompanying exhibition will be held in direct association with the series of lectures on December 6 and 7, 2017. Now appreciated by more than 180 companies from home and abroad as a professional marketing platform, trade visitors can view products from the fields of operation, production, the supply industry, planning and consulting for foundation engineering and tunnelling. You can find currently updated information following [www.stuva-expo.com](http://www.stuva-expo.com).

## ■ Organizer

STUVA –  
Research Association for Tunnels and Transportation Facilities

Mathias-Brüggen-Str. 41, D-50827 Köln  
Phone +49 221 5 97 95-0, Fax +49 221 5 97 95-50  
E-mail: team@stuva-conference.com

### **STUVA – Competence in Transport Infrastructure and Beyond**

The Research Association for Tunnels and Transportation Facilities – STUVA – is an internationally renowned research institute. We mainly develop new methods in the field of producing transport infrastructures in conjunction with industrial partners. Additionally, STUVA undertakes multifaceted tasks in supervision and consulting. The company is divided into the three units Tunnelling & Construction Technology, Transport & Environment as well as Fire Protection & Safety. Specialties of STUVA are large scale testing facilities. Some of our installations are with regard to combination of dimensions and operational parameters unique in the world. Three test halls with a floor space of 2,000 m<sup>2</sup> are available at STUVA's headquarters. Today STUVA has about 250 corporate members within the fields of industries, cities, transportation companies, consulting engineers, university institutes; approximately 25% of which come from abroad.

We are your competent partner for:

- Tunnelling
- Waterproofing of structures
- Fire protection design in underground
- Protection from noise and vibrations
- Safety and security of structures
- Environmental protection and safety at work
- Public transport
- Barrier-free design
- Documentations and statistics

## ■ Veranstalter

STUVA –  
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### **STUVA – Kompetenz in Verkehrsinfrastruktur und darüber hinaus**

Die Studiengesellschaft für Tunnel und Verkehrsanlagen – STUVA – ist eine international tätige Forschungsgesellschaft. Zumeist entwickelt sie zusammen mit Industriepartnern neue Verfahren im Bereich Verkehrsinfrastrukturbau. Darüber hinaus übernimmt die STUVA vielfältige Aufgaben bei Überwachung und Beratung. Die Gesellschaft ist gegliedert in die drei Felder Tunnelbau & Bautechnik, Verkehr & Umwelt sowie Brandschutz & Sicherheit. Ein Spezialgebiet der STUVA sind Großversuchseinrichtungen. Einige der in Köln installierten Anlagen sind in der Kombination von Abmessungen und Betriebsparametern weltweit einmalig. Für Versuche stehen drei Versuchshallen mit einer Fläche von insgesamt 2.000 m<sup>2</sup> zur Verfügung. Die STUVA verfügt heute über etwa 250 korporative Mitglieder aus den Bereichen Industrie, Verbände, Städte, Verkehrsbetriebe, Ingenieurbüros, Hochschulinstitute; ca. 25% stammen aus dem Ausland.

Wir sind Ihr kompetenter Partner für:

- Tunnelbau
- Abdichtung von Bauwerken
- Brandschutzplanung unterirdischer Bauwerke
- Schall- und Erschütterungsschutz
- Sicherheit von Bauwerken
- Umweltschutz und Arbeitsschutz
- Öffentlicher Personennahverkehr
- Barrierefreies Bauen
- Dokumentation und Statistik

## Venues and How to get There

The general assembly will be held at the Parkhotel Stuttgart Messe-Airport, Filderbahnstraße 2, 70771 Leinfelden-Echterdingen, the subsequent members evening will take place in the Echterdinger Brauhaus, the house brewery of the Parkhotel.

The series of lectures, the festive evening and the STUVA-Expo will be held on the exhibition grounds Stuttgart at the International Congress Center Stuttgart (ICS) and in Hall 4, Messepiazza 1, D-70629 Stuttgart.

The exhibition grounds are located roughly 13 km from the centre of Stuttgart and can be reached as follows:

- Stuttgart Airport: walking distance
- Public Transport  
*S-Bahn:* S2 or S3 in the direction of Flughafen (Filderstadt)/Messe Stuttgart. Travelling time from Hbf Stuttgart 27 min. Between 4.55 a.m. and 6.55 p.m. the trains depart any 10 respectively 20 min, until 11:55 p. m. any 30 min.  
*Bus, direct lines:* 828 Tübingen – Messe/Flughafen · 122 Esslingen – Messe/Flughafen · 809 Neuenhaus – Degerloch · X3 Expresso Pfullingen – Messe/Flughafen · X10 Kirchheim – Messe/Flughafen
- Stuttgart taxi call number: +49 711 5510000
- by car: Please follow the signs in the direction of 'Flughafen' (airport). Messe Stuttgart and the ICS are connected directly to the A8 and B27 and are located outside the environmental zone. When approaching the exhibition grounds, please follow the signs of the park guidance system.

## Veranstaltungsorte und Anfahrt

Die Mitgliederversammlung findet statt im Parkhotel Stuttgart Messe-Airport, Filderbahnstraße 2, 70771 Leinfelden-Echterdingen, der anschließende Mitgliederabend findet statt im Echterdinger Brauhaus, der Hausbrauerei des Parkhotels.

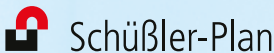
Die Vortragsveranstaltungen, der Festabend und die STUVA-Expo finden auf dem Messegelände Stuttgart im Internationalen Congresscenter Stuttgart (ICS) und der Halle 4, Messepiazza 1, D-70629 Stuttgart statt.

Das Messegelände befindet sich ca. 13 km vom Zentrum entfernt und ist wie folgt erreichbar:

- Flughafen Stuttgart: Fußläufige Entfernung
- Öffentliche Verkehrsmittel  
*S-Bahn:* S2 oder S3 in Richtung Flughafen (Filderstadt)/Messe Stuttgart. Fahrtzeit ab Hbf Stuttgart 27 Minuten. Von 4.55 Uhr bis 18:55 Uhr alle 10 bzw. 20 Minuten, bis 23:55 alle 30 Minuten.  
*Bus, Direktlinien:* 828 Tübingen – Messe/Flughafen · 122 Esslingen – Messe/Flughafen · 809 Neuenhaus – Degerloch · X3 Expresso Pfullingen – Messe/Flughafen · X10 Kirchheim – Messe/Flughafen
- Taxi-Ruf Stuttgart: +49 711 5510000
- Anreise mit dem PKW: Bitte folgen Sie der Beschilderung in Richtung Flughafen. Die Messe Stuttgart und das ICS sind unmittelbar an die A8 und die B27 angeschlossen und befinden sich außerhalb der Umweltzone. Bitte folgen Sie auf dem Messegelände den Anzeigen des Parkleitsystems.



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## Informationen / Information

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