

WG 14 – Mechanized Tunnelling Primary Meeting Minutes

Date: Sunday, 11 Jun 17
Time: 2:00 PM to 4:30 PM
Location: Room 1: Smatroll, Grieg Hall: Edvard Griegs Plass 1, 5015 Bergen, Norway.
<http://www.grieghallen.no/frontpage.aspx>
Animateur: Brian Fulcher Brian.Fulcher21@hotmail.com
Vice Animateur: Karin Bäßler Baessler.Karin@herrenknecht.de
Tutor: Soren Eskesen sde@cowi.dk

Attendees:

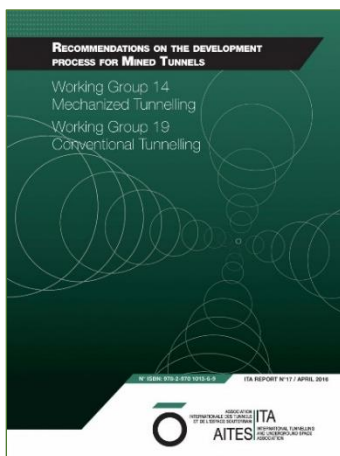
Nicole Boulton	Canada	Giovanni Giacomini	Italy	Richard Schulkins	Singapore
Dean Brox	Canada	Kazuhiko Imakura	Japan	Roberto Schuerch	Switzerland
Karel Roessler	Czech Republic	Mitsutaka Sugimoto	Japan	M. Mannot-Russel	Switzerland
Lars Langmaack	Finland	Chi-Kwang Jung	Korea	Aphichat Sramoon	Thailand
Werner Glatz	Germany	Dae-Young Kim	Korea	Tyler Sandell	USA
Werner Berger	Germany	Tobias Anderssen	Norway	Mike Mooney	USA
Christof Metzger	Germany	Amund Bruland	Norway		
Lars Baberdererde	Germany	Fredrikke Syversen	Norway		
Mario Galli	Germany	Arnulf Hansen	Norway		
Jakob Kuepferle	Germany	Sindre Log	Norway		
Ivan Popovic	Germany				

Meeting Minutes

Item	Discussions and Commentaries	Participation	
		Lead	Follow-Up
1	Introductions and Initial Exchange of Publications		
	<ul style="list-style-type: none"> Introduction of all meeting attendees Confirmation of delegates from member nations and new delegates Publication(s) exchange by attendees (hard copies, CDs and flash drives) New tunneling books of interest related to mechanical tunneling 		
2	Brief PowerPoint Presentations		
	<ul style="list-style-type: none"> Follo Line Railway Tunnel, Norway SR 99 Tunnel in Seattle (17 m diameter), USA The Ulriken Railway Tunnel, Norway 	Presenters	<i>Great pts Well done by all</i>
3	Publications by Other Working Groups		
	<ul style="list-style-type: none"> Roberto Schürch from WG 17 “Long Tunnels at Great Depth” provided copies of the WG 17 publication “TBM Excavation of Long and Deep Tunnels Under Difficult Rock Conditions WG 14 was not aware of the work done in WG 17 	Roberto Schürch	
		All	S. Eskesen

Item	Discussions and Commentaries	Participation	
		Lead	Follow-Up
	<ul style="list-style-type: none"> How do we deal with overlapping topics in other WGs? ITA should better steer or inform the WGs and WG-Animateurs about the contents of the WGs and/or ITA Tech topics to avoid double work or to organize joint publications 		
4	General Discussion on Proposed New Projects for WG 14		
	<ul style="list-style-type: none"> General discussions It was mentioned that recommendations are existing in different countries for tunneling; <ul style="list-style-type: none"> “ITA would be the organization to do a general recommendation concerning all recommendations of different countries in one “ITA recommendation” 	W. Berger	
	<ul style="list-style-type: none"> Mike Mooney presented his ideas about training. He is interested in key elements for training purposes: <ul style="list-style-type: none"> Recommendations of what needs to be focused on Key points, aspects of teaching, documentation Goal: to have a curriculum that comes out of WG 14 simulator/ jobsites/ laboratory 	M. Mooney	
5	Detailed Discussions on Proposed New Projects for WG 14		
	<ul style="list-style-type: none"> Four main topics were decided in the WG meeting to follow-up in the next months and to split into subtasks; 		
	<p>1. Training for supervisors and operators</p> <ul style="list-style-type: none"> Mike Mooney, Subtask leader Jamal Rostami Member Amund Bruland Member M. Mannot-Russell Member 	M. Mooney	
	<p>2. TBM Guidelines</p> <ul style="list-style-type: none"> Dean Brox Subtask leader Tyler Sandell Member Aphichat Sramoon Member Roberto Schürch Member Karel Rössler Member Karin Böppler Member 	D. Brox	
	<p>3. Innovation Technology Developments</p> <ul style="list-style-type: none"> Lars Langmaack Subtask leader Christof Metzger Member Jamal Rostami Member M. Mannot-Russell Member Mario Galli Member Chi-Kwang Jung Member 	L. Langmaack	
	<p>4. Muck Disposal Options and Treatments</p> <ul style="list-style-type: none"> Richard Schulkins Subtask leader Giovanni Giacomini Member Britta Schösser Member 	R. Schulkins	

Item	Discussions and Commentaries	Participation	
		Lead	Follow-Up
6	Conclusions for Break-Out Groups		
	<ul style="list-style-type: none"> Path going forward: <ul style="list-style-type: none"> Goals and schedules Individual assignments and summaries 	B. Fulcher	K. Bächler
	<ul style="list-style-type: none"> Structure and timetable to be build up for main topics 1 to 4 	Sub Task Team Leaders	
	<ul style="list-style-type: none"> Scope and timetable to be send out by the Animateur 	B. Fulcher	K. Bächler
7	Follow-Up Meetings		
	<ul style="list-style-type: none"> Additional meeting(s) in Bergen (Monday) Additional meeting in Stuttgart (STUVA) on 6 to 8 Dec 17 	B. Fulcher	K. Bächler
8	Additional Discussions and Publications for Distribution		
	<ul style="list-style-type: none"> Markus Thewes published for the DAUB <i>"Recommendations for Face Support Pressure Calculations for Shield Tunnelling in Soft Ground"</i>. Please find the recommendations attached. 		
	<ul style="list-style-type: none"> The colleague from Japan mentioned that there are no common standards in Japan. There are different standards dependent on the ministries. We also have in Europe different specifications and standards in Germany, France, UK, Switzerland,... 		
	<ul style="list-style-type: none"> It was discussed briefly in the WG meeting that we can do a collection of recommendations / standards and to do a common international standard from ITA. This will be difficult due to different views and interests in the member nations/ countries. But what can be done and this is absolutely tough work is, to do a matrix and to work out the differences in the guidelines, standards, recommendations and to focus on these differing topics to maybe create a common international ITA standard. 		

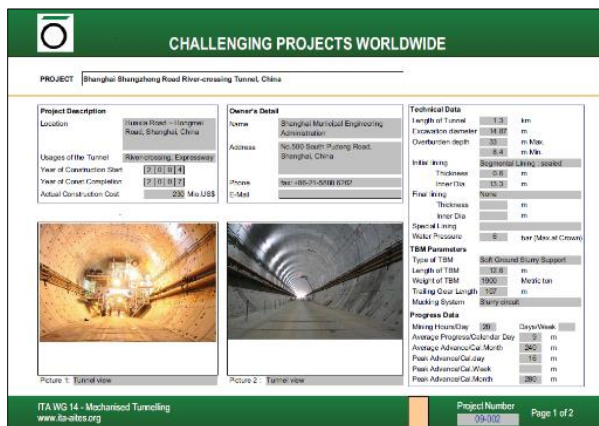


This publication is a 32-page summary of the decision-making process for determining the most appropriate tunnelling method between mechanized (e.g. TBM) and conventional tunnelling (i.e. drilling and blasting) and other tunnelling methods. It was several years in development and refinement and relies on the collective resources and experience from two well-established ITA Working Groups and approximately 20 contributors from around the globe.

Soft bound copies are available from the WG-14 Animateur on request. Please feel free to contact Brian at Brian.Fulcher21@Hotmail.com

WTC 2017 Working Group 14 – Ongoing Activities

- **Adding well-focused reference documents to the ITA-WG-14 webpage and improving access to all ITA documents. WG-14 documents could include some of the following for example:**
 - Contract specifications
 - Technical reports, research papers, ground improvement methods
 - Geotechnical reports and recommendations for support and groundwater
- **Ongoing collection of *Challenging Project Summaries and List* to the WG-14 webpage:**
 - More projects requested from the member nation participants in the Working Group
 - New projects to be presented in the Working Group meeting in Bergen in June
 - For reference, Challenging Projects List includes the following;



CHALLENGING PROJECTS WORLDWIDE

PROJECT: Shanghai Shangzhang Road River-crossing Tunnel, China

Project Description Name: Shangzhang Road - Hongwai Road, Shanghai, China Location: Shanghai, China Uses of the Tunnel: Motorcrossing, Expressway Year of Construction Start: 2014 Year of Close Completion: 2017 Actual Construction Cost: 300 Mil USD	Owner's Detail Name: Shanghai Municipal Engineering Administration Address: No. 900 South Pingliang Road, Shanghai, China Phone: Sec: 86-21-5988 8197 E-Mail:	Technical Data Length of Tunnel: 1330 m Excavation diameter: 13800 mm Construction depth: 33 m Max. Initial Ring: 3300 mm Thickness: 30 mm Inner Dia: 3240 mm Final Ring: 3300 mm Thickness: 30 mm Inner Dia: 3240 mm Special Ring: 3300 mm Water Pressure: Not (Max at Crown) TBM Parameters Type of TBM: Full Closed Skirt Support Length of TBM: 1330 m Weight of TBM: 19500 Metric ton TBM Clear Length: 1300 m Muck-Up System: Shrinkage Progress Data Mining Hours/Day: 240 Days/Week Average Progress/Clockwise Day: 5 m Average Advance/Cal Month: 360 m Peak Advance/Cal Day: 110 m Peak Advance/Cal Week: 700 m Peak Advance/Cal Month: 360 m
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With the regular updated “Challenging Projects List” the reader receives an overview of the current high profile projects.

According to the stipulated “Criteria for Challenging Projects” a selection of projects demonstrates the capability of tunnel boring machines in various aspects, such as special characters of the encountered geology, or certain features of the tunnel alignment and as well new technologies with certain impact on the TBM tunnelling industry.

This list will be updated regularly and the WG 14 hopes to expand this document into an informative compilation of interesting projects.

A “Challenging Project” submittal form allows the submittal of additional projects to

the WG for enclosure. It is based on a PDF-form which assures an easy handling of the data to submit

wg14data@ita-aites.org

<https://www.ita-aites.org/en/wg-committees/working-groups/211-ita-active-working-groups/working-group-14-mechanization-of-excavation>