**BIM in Tunnelling**

Digitalisation is currently spreading rapidly in many areas of the economy. It is also a major topic in the construction industry, with the aim of achieving sustainable benefits for all stakeholders and society. Information on construction assets – and especially for underground structures – should be made available to decision makers more quickly and in a consistent, high quality, easily readable form to support individual decisions.

Compared to other branches of industry, digitalisation arrived in construction industry and particularly in infrastructure rather late. To a significant extent, this is due to the very high complexity in the value added chain in construction. Now however, the gap to the other industry branches is to be closed. Many first isolated solutions have been developed in the course of pilot projects, but the required degree of standardisation has been lacking for quite some time.

Therefore, DAUB, the German Tunnelling Committee took the initiative and prepared a recommendation on digital design, building and operation of underground structures, called “BIM in Tunnelling”. This document has been published in 2019 and has been amended by additional “Model Requirements” published in 2020. The work was supported by the Austrian and Swiss partner associations.

The planned webinar gives a comprehensive overview of the basics of BIM in underground construction in general, and the contents of the developed recommendation in particular. It will start from the current situation and will show the application of BIM in tunnelling, as well as provide assistance for efficient practical use.

The webinar is organised by DAUB and EUTF

**Contact**

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**Save the Date!**
Participation free of charge

**Webinar**
**on DAUB Recommendations**

**BIM in Tunnelling**

March 18, 2021  
13:00 – 17:30
13:00 Welcome and Introduction
Dipl. Bau-Ing. FH/SIA Stefan Maurhofer, Chair EUTF

13:15 Fundamentals, Planning and Design
Chair: Dipl.-Ing. Lars Babendererde, BabEng GmbH (D)

- Digital Design, Building and Operation of Underground Structures – General Constraints
  Starting point and objectives, life cycle of underground structures, special features of underground construction, project development and realisation based on collaborative contract models, benefits for operation and maintenance
  Dipl.-Ing. ETH Heinz Ehrbar, Heinz Ehrbar Partners GmbH (CH)

- Basics of Building Information Modelling
  Multi-dimensional design (from 2D to xD), models, model granularity (LoX), data management and interfaces, limits to the informative value of digital models, roles and responsibilities, modelling rules, use cases for underground construction
  Dipl.-Ing. Stephan Frodl, Ed. Züblin AG (D)

- Designing the „I“ in BIM
  Increasing importance of semantics and ontologies for knowledge-based decision making with 3D models, standards and procedure for interconnected (BIM) dictionaries, application of (BIM) dictionaries in tunnelling domain, concept of rule-based validation of semantics (and ontologies)
  Dr.-Ing. Tobias Rahm, DEGES Deutsche Einheit Fernstraßenplanungs- und -bau GmbH (D)

Break

15:30 Implementation and Realisation
Chair: Dr.-Ing. Peter-Michael Mayer, Ed. Züblin AG (D)

- BIM-based Design and Tendering
  Model-based design, coordination, quantity take-off, cost estimation and extraction of drawings, model-based tendering, bill of quantities, tender award, construction preparation and model handover to contractor.
  ETH Bau-Ing. Eric Carrera, M. Sc., Lombardi Engineering Ltd. (CH)

- Multidimensional Data Integration for BIM
  Consideration of multiple standards and data models as well as diverging granularity and specificity in data, common architecture considering domains and sub-domains, different levels of abstraction, flexibility of data modelling and data transformation based on pre-defined workflows
  Prof. Dipl.-Ing. Mag. rer. soc. oec. Dr. techn. Alexandra Mazak-Huemer, Lehrstuhl für Subsurface Engineering, Montanuniversität Leoben (A)

- Example for Application of BIM in a Specific Project
  Practical hints from an application in a specific tunneling project, transforming planning into reality, challenges and implementation, added value of using digital tools in the construction phase
  Dipl.-Ing. Wolfgang Fentzlaff, Implenia Construction GmbH (D)

Questions and Answers
During and after the presentations considerable time will be dedicated to questions and answers as well as for discussion of special problems.

Closing Remarks and Outlook
Dipl. Bau-Ing. FH/SIA Stefan Maurhofer, Chair EUTF

Participation, Registration
- Participation in the webinar is free of charge.
- Conference language will be English.
- Programm updates and registration information can be found at www.daub-ita.de/en/bim/.

DAUB Recommendations
DAUB, the German Tunnelling Committee, regularly provides „best practice“ solutions for tunnels and underground facilities. The recommendations can be downloaded free of charge from the website: www.daub-ita.de (subtopic Publications)

- BIM in Tunnelling
  Digital Design, Building and Operation of Underground Structures

- Model Requirements, Part 1
  Object definition, coding and properties
  Supplement to DAUB recommendation BIM in Tunnelling