

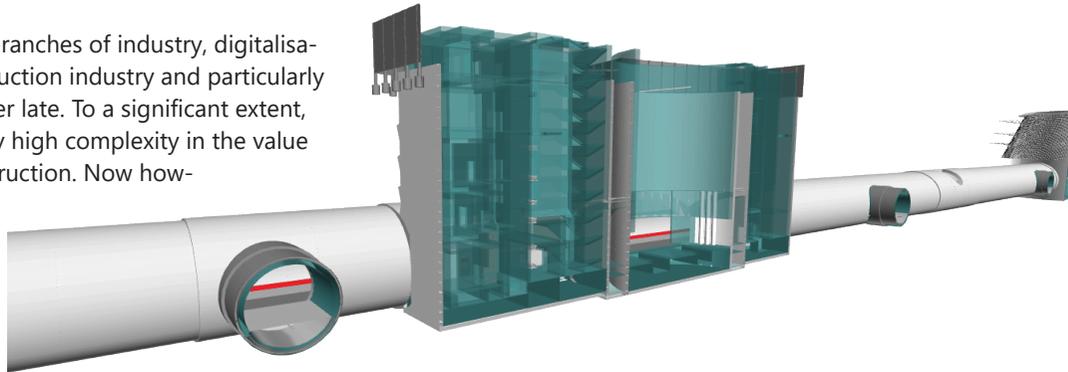
## BIM in Tunnelling

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 addressed to

- Owner's representatives,
- Designers, planners,
- Construction companies,
- Contractors, suppliers,
- Operators, and
- Government agencies.

### Contact

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*The webinar is organised by DAUB and EUTF*



Deutscher Ausschuss für  
unterirdisches Bauen e. V.  
German Tunnelling Committee



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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 tunnelling project, transforming planning into reality, challenges and implementation, added value of using digital tools in the construction phase

Dipl.-Ing. Wolfgang Fentzloff, 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/](http://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](http://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

