Building Information Modeling (BIM) - The BIM Project
Central Railway Station Hannover

Christian Clemen and Christian Manthe (Germany)
Central Railway Station Hannover

- 750 trains / 260,000 passengers a day
- Innercity shopping and meeting area
- Railway hub for domestic and international connections

Why BIM?

- Refurbishment of station, platforms and tracks
- Long-term construction from 2020-2030
- Continuing railway service
- Collaboration: Project managers, engineers, authorities (Railway Regulations), operator
BIM & Engineering Surveying – Coordinate Reference Frame

- BIM-Coordinates **small** (<33km) and **scale** = 1
- Transformation parameters from ETRS89/UTM and DB_REF to the **shared construction side coordinates system** are specified
- **Distribution** in order to work with diverse CAD/BIM Software
  - Standard (XML-) Files
  - Simple handbook "How to use coordinate systems with CAD/BIM software"
  - Promotion in the project team
BIM & Engineering Surveying – CAD/BIM Metadata
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- Common Data Environment (CDE)
- Managing Versions & Variants
- Roles and Rules for data access
- Metadata for "big data"
BIM & Engineering Surveying – CAD/BIM Metadata

Three types of document management system (DMS)

**SharePoint:** Easy access via Intranet and Internet

**Vault:** Managing CAD-Files and XREFs

**Revit:** Modeling and Managing Building Elements
BIM & Engineering Surveying – 3D Pointcloud Management and Distribution

3D Pointcloud - Single Source of Truth
BIM & Engineering Surveying – 3D Pointcloud Management and Distribution

Web-Viewer for visual inspection and fast&simple measuring

BIM modeling reference
- Well organised (splittet) pointclouds
- Logically linked to the BIM model
BIM Specifications

• Specification for digital planning and construction
• Including “Survey Specification”
• File Formats
• Content and Timelines
• Measured surveys and BIM modeling
• Accuracy, Level of Details (LoD)
• and, and, and
DB Engineering & Consulting

- Leading company for large infrastructure projects, worldwide
- More than 3800 employiers
- More than 230 employiers in Unit Environment, Geophysics and Geodesy
BIM Culture

- **Collaboration**: Technically, in the organisation, open minded
- **Lifecycle**: Long term thinking

**Governmental action**: German Federal Ministry of Transport and Digital Infrastructure announced the BIM introduction until 2020

**Education**: Teaching BIM to Geomatics

see [TS05G - Teaching and Learning for the Future Time](#)
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