

Presented at the FIG Working Week 2016,  
May 2-6, 2016 in Christchurch, New Zealand



# FIG Working Week 2016

CHRISTCHURCH, NEW ZEALAND 2-6 MAY 2016

Recovery

from disaster

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

Paper #8383

Christian Clemen and Christian Manthe (Germany)



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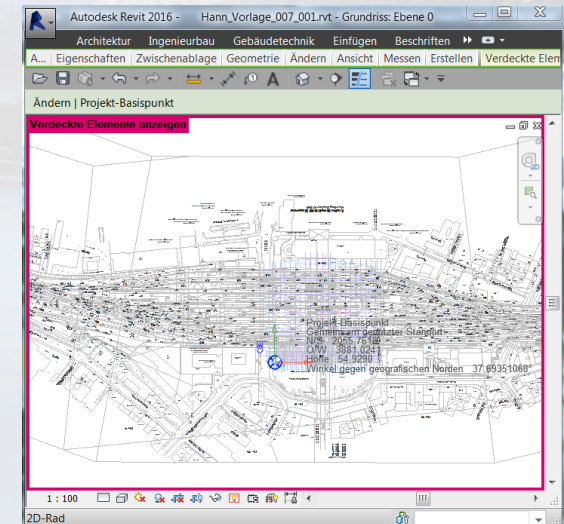






## BIM & Engineering Surveying – Coordinate Reference Frame

- BIM-Coordinates **small** (<33km) and **scale** = 1
- Transformation parameters from ETRS89/UTM and DB\_REF to the **shared construction site coordinates system** are specified
- **Distrubition** 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





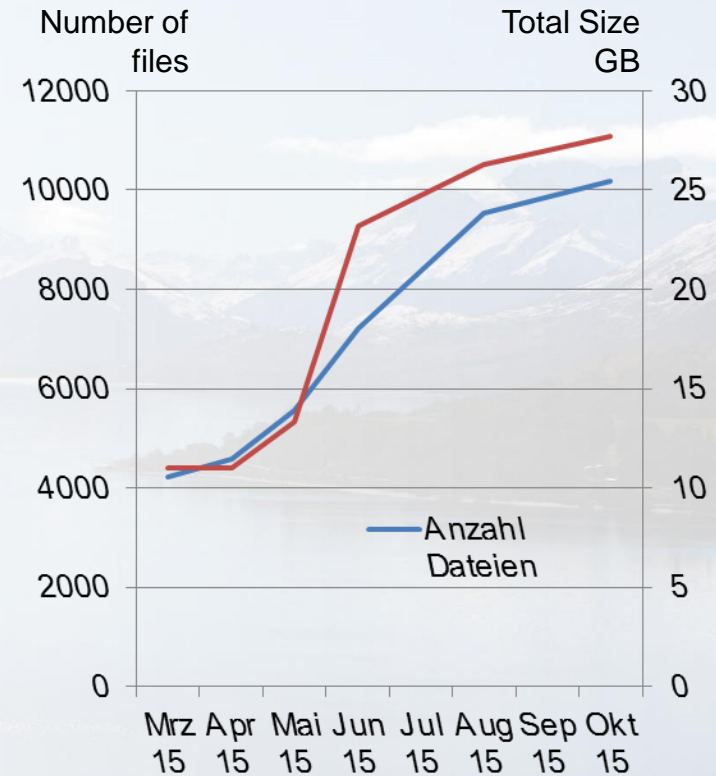
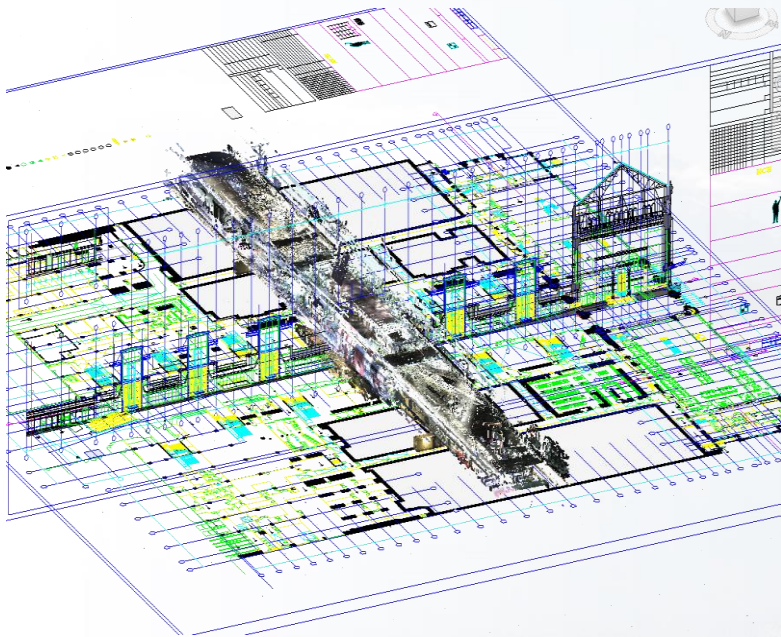
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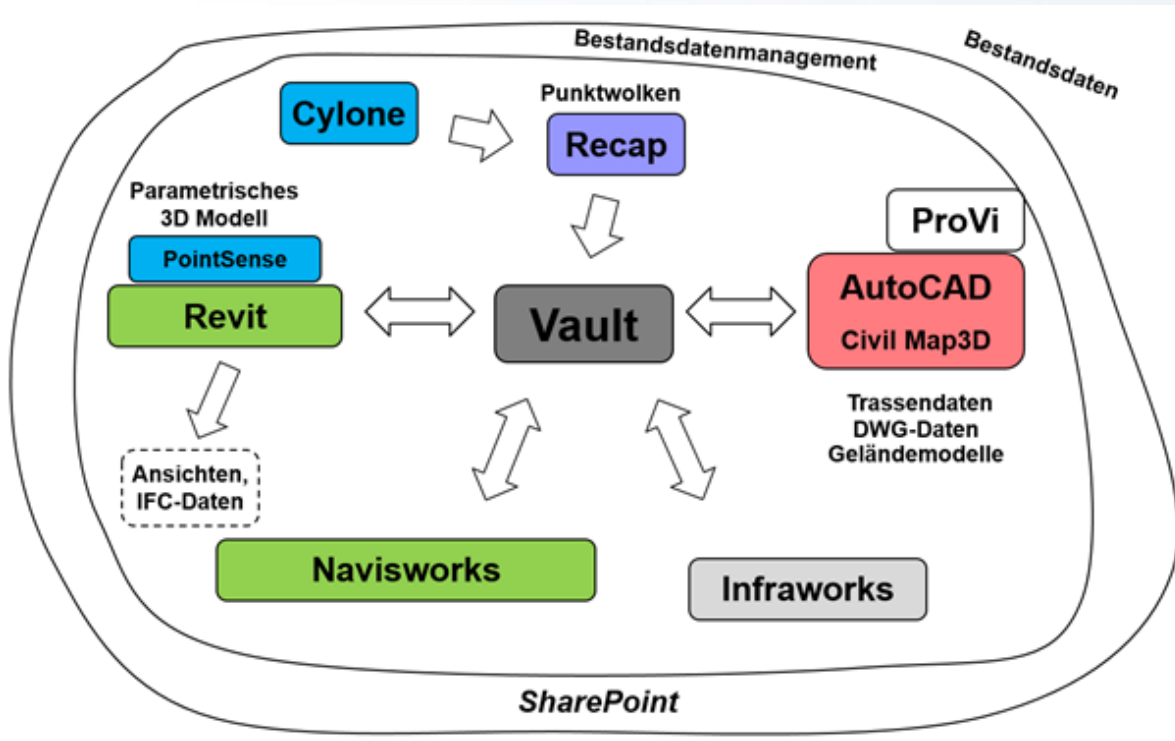
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## BIM & Engineering Surveying – CAD/BIM Metadata





## BIM & Engineering Surveying – CAD/BIM Metadata



- Common Data Environment (CDE)
- Managing Versions & Variants
- Roles and Rules for data access
- **Metadata** for "big data"



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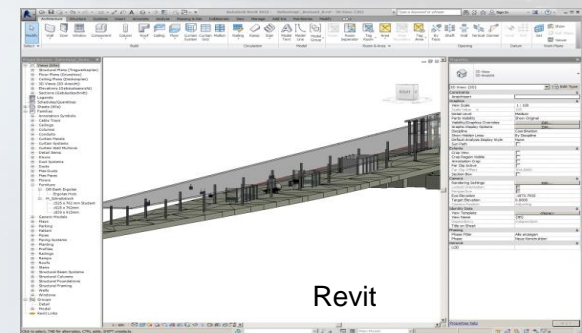
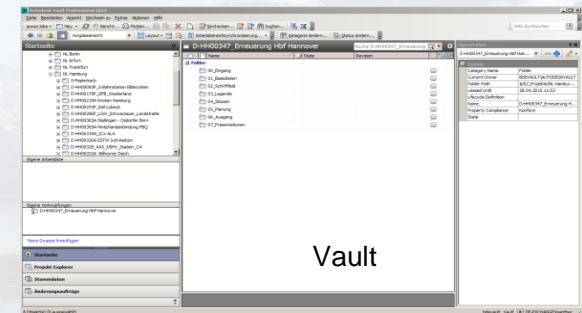
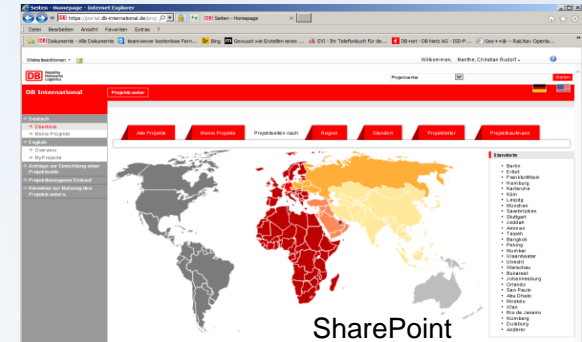
## BIM & Engineering Surveying – CAD/BIM Metadata

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



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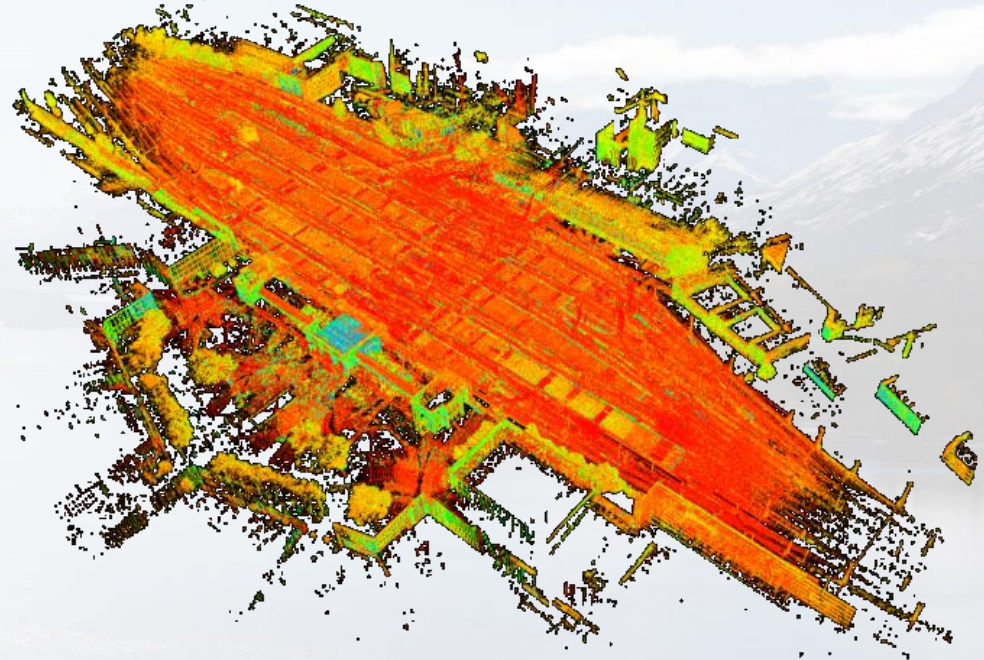


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## BIM & Engineering Surveying – 3D Pointcloud Management and Distribution



3D Pointcloud - Single Source of Truth





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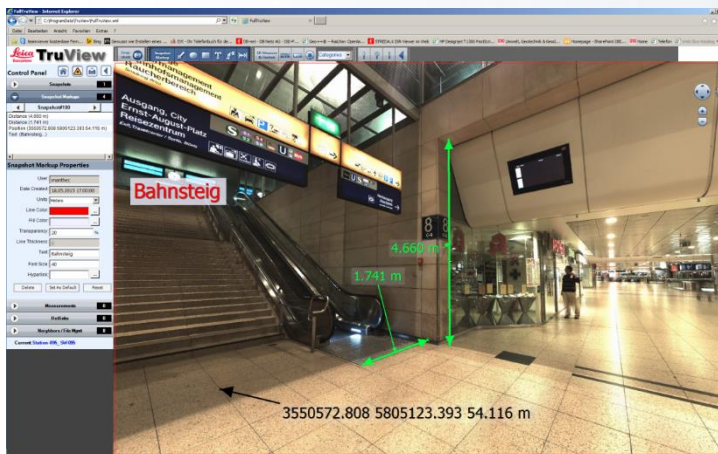
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## BIM & Engineering Surveying – 3D Pointcloud Management and Distribution

Web-Viewer for visual inspection and fast&simple measuring

BIM modeling reference

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



A	B	C	D	E
ReferenzDateiname	ReferenzObjekt	Ort	SharePoint URL	Allesgemein
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06_06_Straße.rcp	Baug B	Passage	http://geo.de-consult.de/annover/annover06_06_Straße.rcp	ReferenzObjekt - Ring F
07_07_Esplanade.rcp	Baug B	Passage	http://geo.de-consult.de/annover/annover07_07_Esplanade.rcp	Bahnsteig
08_08_Accessorize.rcp	Baug B	Passage	http://geo.de-consult.de/annover/annover08_08_Accessorize.rcp	Abstellanlagen
13_13_Taxi-Halter.rcp	Baug D	Passage	http://geo.de-consult.de/annover/annover13_13_Taxi-Halter.rcp	Lehrer
14_14_Quickpress.rcp	Baug D	Passage	http://geo.de-consult.de/annover/annover14_14_Quickpress.rcp	Berle
15_15_Sanitär.rcp	Baug D	Passage	http://geo.de-consult.de/annover/annover15_15_Sanitär.rcp	Flucher
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17_WorldofT-Tabacco.rcp	Baug E	Passage	http://geo.de-consult.de/annover/annover17_WorldofT-Tabacco.rcp	D-Gate
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20_Burger-King.rcp	Baug F	Passage	http://geo.de-consult.de/annover/annover20_Burger-King.rcp	Weg
21_Bahnhofkassensystem.rcp	Baug F	Passage	http://geo.de-consult.de/annover/annover21_Bahnhofkassensystem.rcp	Kommentare
26-01_Baumgarten_Virtual-Beamer.rcp	Baug A	Passage	http://geo.de-consult.de/annover/annover26-01_Baumgarten_Virtual-Beamer.rcp	Bühnen
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## 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





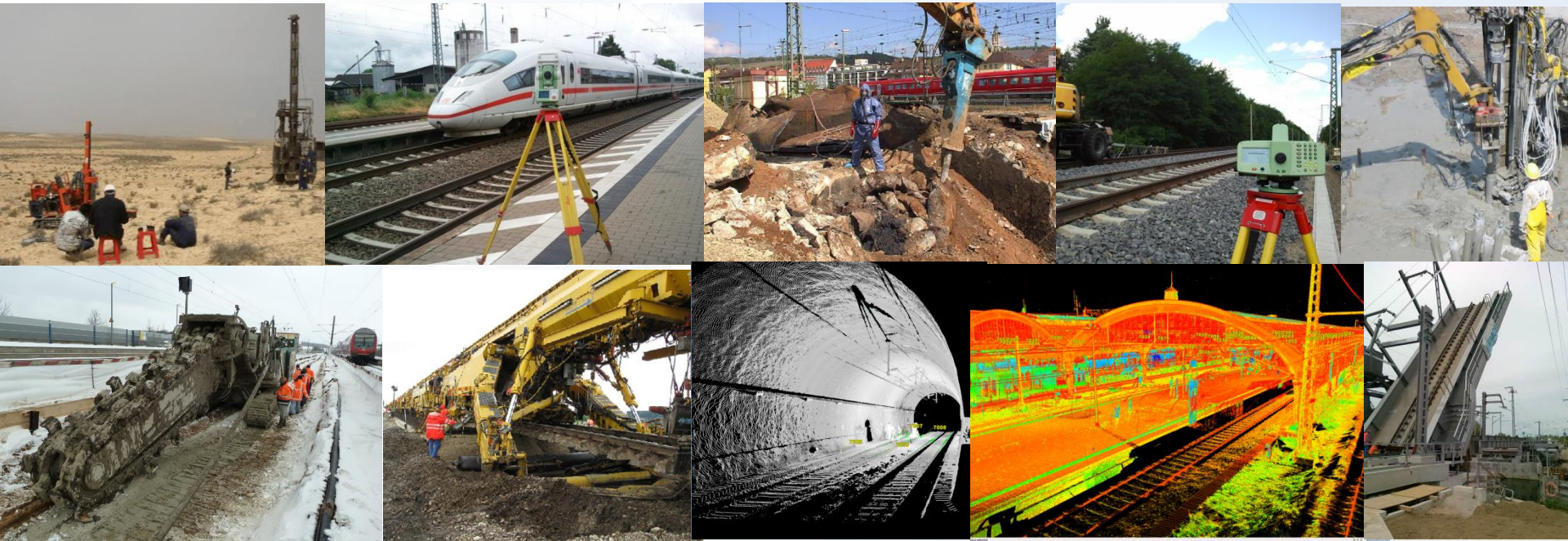
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## DB Engineering & Consulting



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



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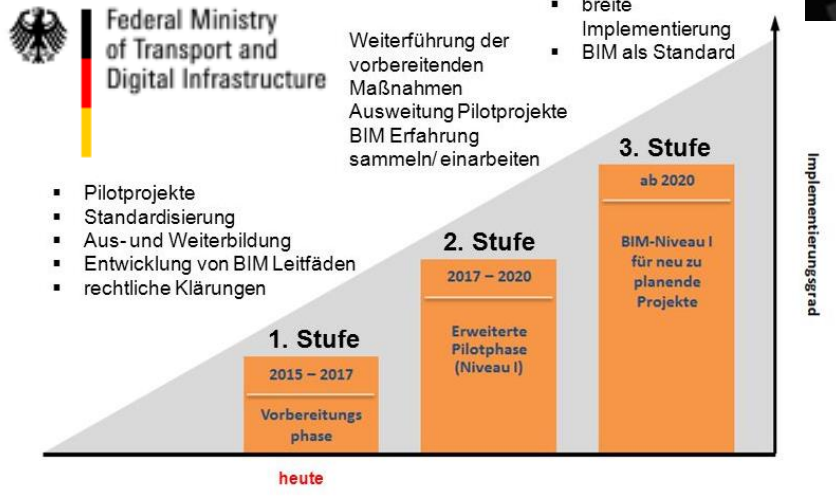
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## BIM Culture

- **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: 5/4/2016 4:00:00 PM**



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## Contacts

- Prof. Dr. - Ing. Christian Clemen, Dresden University of Applied Sciences (HTW)  
E-Mail: christian.clemen @ htw-dresden . de
- Dr. - Ing. Christian Manthe, DB Engineering & Consulting, Berlin  
E-Mail: christian.manthe @ db-international . de