BIM AND DRONES
...FOR INFRASTRUCTURE

THOMAS GROENINGER
BUSINESS UNIT MANAGER DIGITALIZATION
“Digitalization, more than tablets on the construction sites”
GOAL: TO DELIVER ALL THE INFORMATION OF THE PROJECT
Information Loss – Conceptual Plot motivating the USACE’s process analysis
Developed by Dana K. Smith, Building Smart Alliance, NBIMSc
THE SERVICE OF NEW TECHNOLOGY...
DRONES FOR MAPPING
DATA ACQUISITION WITH UAV

- **Fast data collection**
  Surveyor spends less time on site
- **Reach inaccessible areas**
  More areas can be surveyed
- **Safe work area**
  Surveys can be performed from safe locations
APPLICATIONS

PROGRESS MONITORING
A.I. BASED CLASSIFICATION OF THE POINT CLOUD
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OVERVIEW OF CURRENT PROJECTS
MOBILE MAPPING
• Dual laserscanner for corridor mapping
  – Absolut accuracy 1-2 cm
  – Relative accuracy 5 mm
• Panorma camera
• Precise mapping of infrastructure at high speed (up to 110 km/h) and in active traffic
• Detailed point clouds

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MOBILE MAPPING
BIM FOR INFRASTRUCTURE
MODEL BASED QUANTITY CALCULATION

- Project A5 Drasenhofen
- 5 km
- Monthly flight
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MODEL BASED QUANTITY CALCULATION

UAV Flight
02. September 2018

km 3+875

UAV Flight
02. August 2018

terrain

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MODEL BASED QUANTITY CALCULATION

Drone point cloud

Stationing

Planning model

Axis

Volume asphalt 2.145,50 m²

Volume frost protection layer 3.957,80 m²

Volume soil 12.565,60 m²

Volume shoulder 3.197,50 m²
OUR VISION TO CONNECT THE SYSTEMS WITHIN THE CORPORATE AND REDUCTION OF THE MEDIA BREAKS