Analysis of Possibilities to Utilise Results of Laser Scanning in Technical Inspection of Water Dams

Artur ADAMEK1, Janina ZACZEK-PEPLINSKA2, Klaudia GERGONT2, Poland

1) Warsaw University of Technology
2) Jagiellonian University

The main aim of the project: usefulness of laser scanning in technical inspection
Analysis of Possibilities to Utilise Results of Laser Scanning in Technical Inspection of Water Dams

Location:
- on 172.8 km of Wisłok river (Poland)
- The dam was provided for use in 1978
- Length: 174 m
- Maximum height: 38.2 m
- Volume of a concrete used for construction: about 70,000 m³
- 14 independent, expansion-jointed concrete sections:
  - 12 deaf sections with a width of 12 m,
  - 2 overflow sections with a width of 15 m
- Creager’s type of a surface overflow
  - two overflows of 11.20 max 2.60 m sections hatches closed with a height of 2.60 m controlled by a hydraulic drive

Measurements:
- Classical
  Leica TCRP 1201+
  Leica TM 30
- GNSS
  Leica System 1200
  Leica System 500
Analysis of Possibilities to Utilise Results of Laser Scanning in Technical Inspection of Water Dams

Conclusions:

• scanning technology is still only a supplement to the conventional and photogrammetric methods of measurements
• the specific character of hydrotechnical facilities require to develop their own methodology of measurements using laser scanning technology
• the ability to assess the moisture of outer content layers of concrete
• research on the potential use of scanning results for evaluation technical condition of concrete
• need for further research and development of the technology in the technical inspection of dams

Thank you!