FIG WORKING WEEK 2025
AND Locate25 THE NATIONAL GEOSPATIAL CONFERENCE
Collaboration, Innovation and Resilience: Championing a Digital Generation
FIG Geospatial Council of Australia
Brisbane, Australia 6–10 April

Virtual Reality – "Just to be cool is not enough"

An intermediate report of the FIG Working Group 6.3

Peter BAUER, Austria, Dimitrios BOLKAS, United States of America, Matthew O'BANION, United States of America, Christoph BLUT, Germany, Werner LIENHART, Austria, Wolfgang SCHOTTE, Germany, Sandra STAIGER, Germany, Allan Y NG, United States of America

Presenter:

Prof. Werner Lienhart

ORGANISED BY FIG Geospatial Council of Australia
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FIG Working Group 6.3 – Commission 6

- Aims of the working group
  - Exchange of knowledge within the group
  - Assess the benefits of technologies and the potential usage in engineering geodesy
  - Push these technologies
  - Share the knowledge with the community

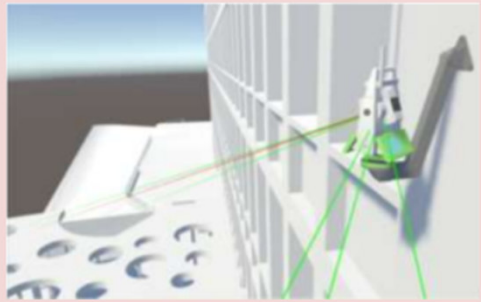
- Covering all immersive technologies
  - Augmented reality (AR)
  - Virtual reality (VR)
  - Mixed reality (XR)

What we do

For the term 2023-2026 FIG Commission 6 will be working on:

- **Deformation Monitoring and Analysis** (WG 6.1)
- **Dynamic Structural Monitoring** (WG 6.2)
- **Applications of immersive technologies in Engineering Geodesy** (WG 6.3)
- **Engineering Surveying Outreach** (WG 6.4)

PDF: Work Plan
VIDEO: Chair of the commission Werner Lienhart takes you through the work plan



Chair of FIG Commission 6:
Werner Lienhart, Austria

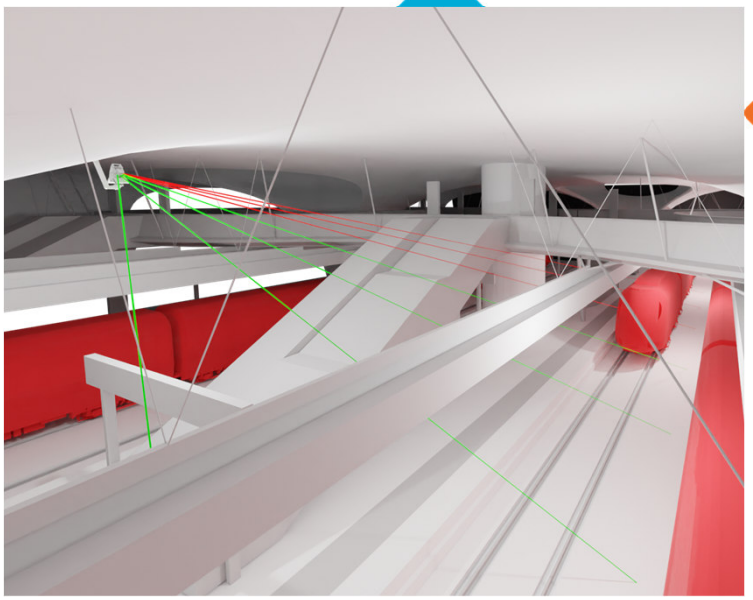
Join Commission 6 on LinkedIn

https://www.fig.net/organisation/comm/6/index.asp

Applications

- Teaching and training

- Network design



- Visualisation and interaction with data

Bauer P, Lienhart W (2023) *3D concept creation of permanent geodetic monitoring installations and the a priori assessment of systematic effects using Virtual Reality*. Journal of Applied Geodesy 17(1): 1–13: https://doi.org/10.1515/jag-2022-0020

VR Hardware and Software Environment

- VR devices are available on the consumer market (~ 250 € to 1500€)

- The creation of VR applications is supported by every major game engine

unity

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Feedback from the community

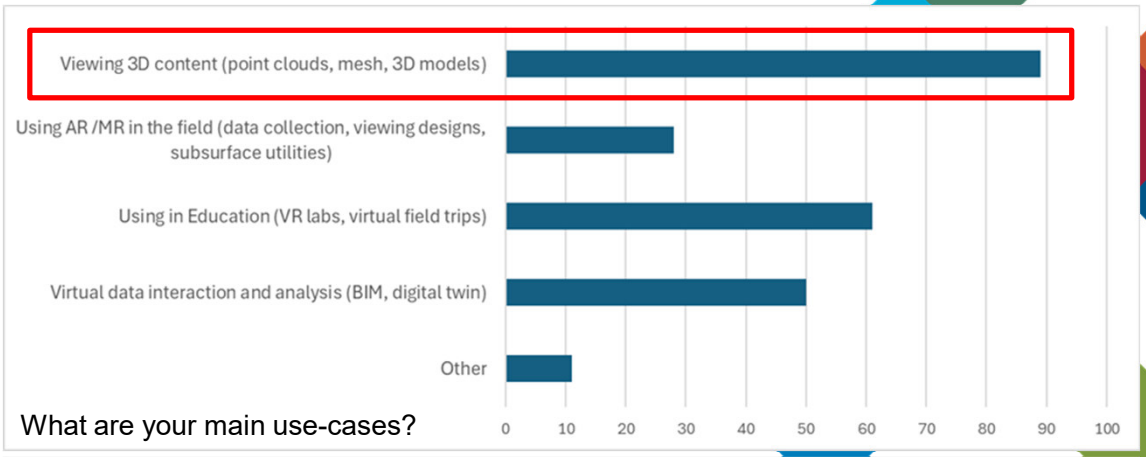
- Online Survey
  - around 40 responses

As supported by commercial software… …however, this should not be the limit for innovation!

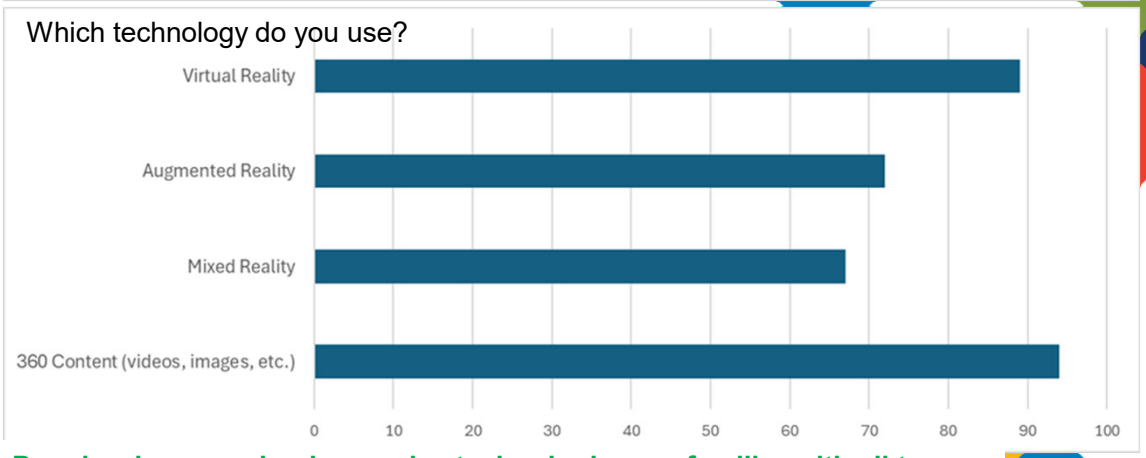
Online survey

The link is still open, and the final results will be released in 2026

Please fill it out and share it, also if you haven't used AR/VR/MR yet



What are your main use-cases?



People who are using immersive technologies are familiar with all types

Feedback from the community

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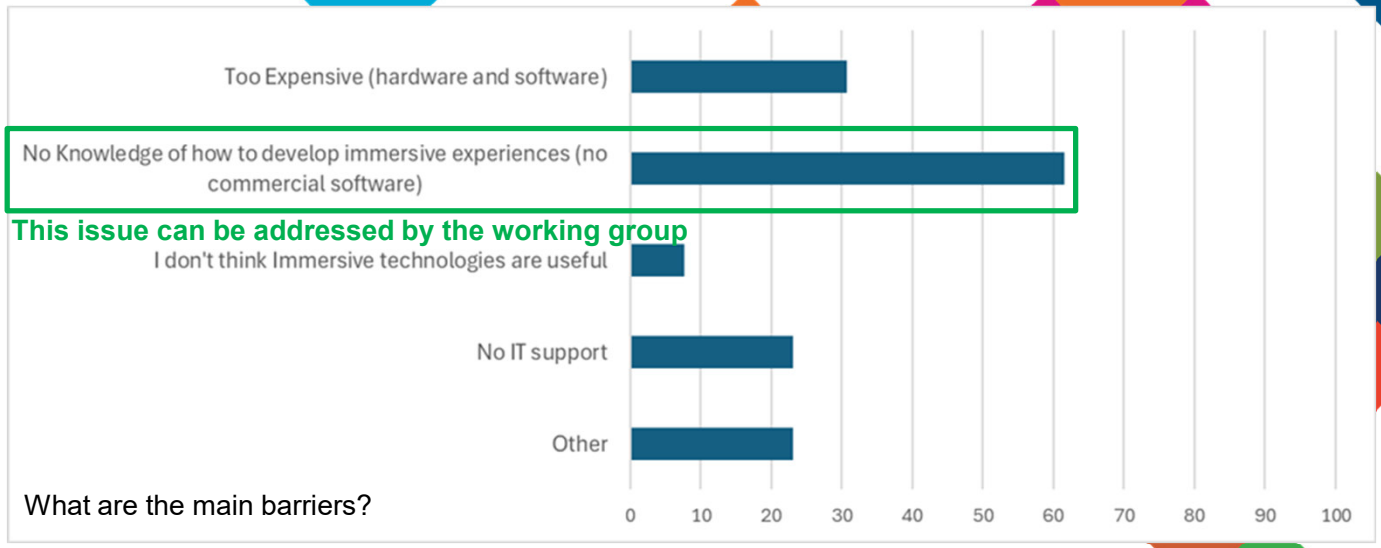
Online survey



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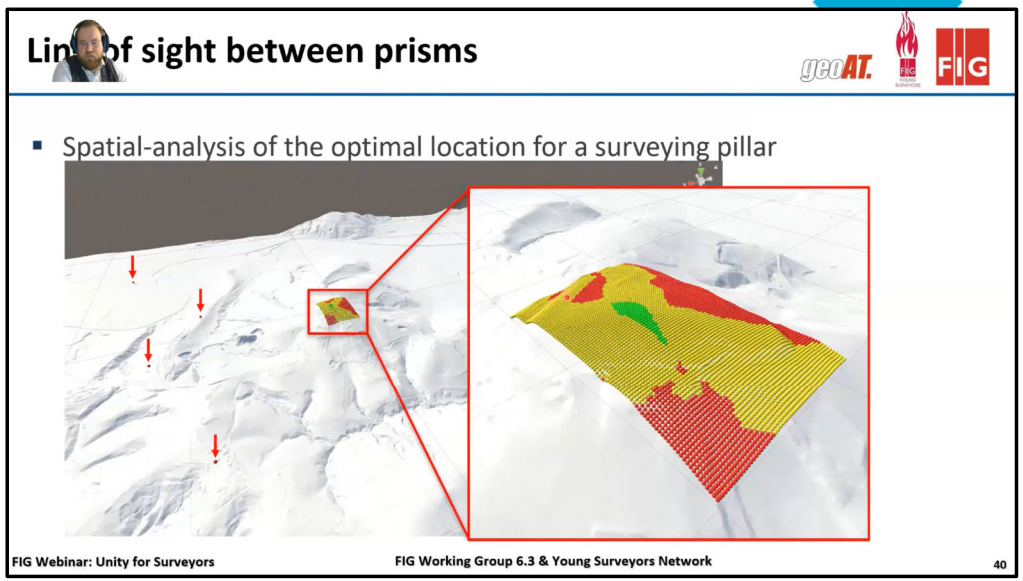
WG 6.3 Activities

- Webinar: Create your own VR application

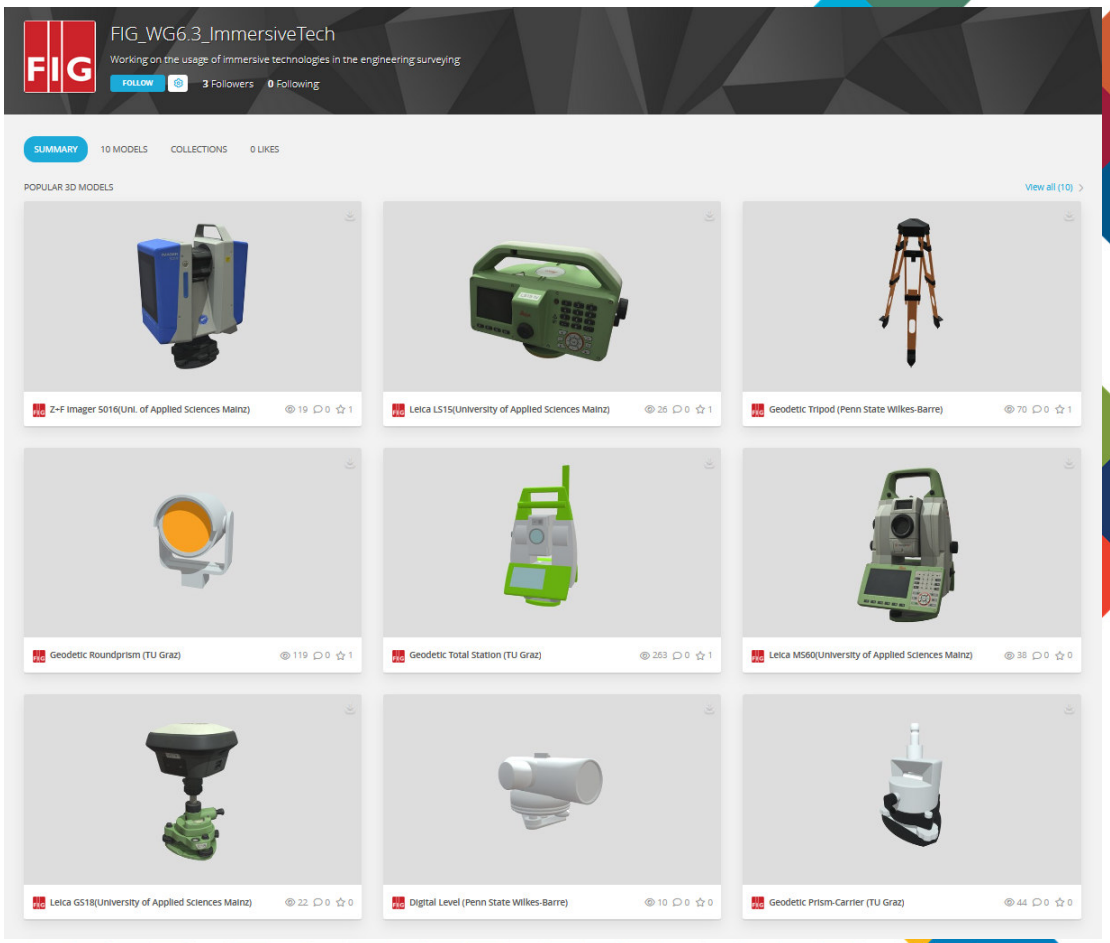


- Recording on FIG YouTube channel available soon:
- https://www.youtube.com/FIGSurveyors

WG 6.3 Activities

- Virtual catalogue of surveying gear
- https://sketchfab.com/FIG_WG6.3_ImmersiveTech

Leica MS60(University of Applied Sciences Mainz)
3D Model



Summary

- Virtual Reality is a ready-to-use tool for visualisation and interaction with complex 3D data geo-data
- Devices are produced for the mass market and game engines provide easy access for development beginners
- The FIG working group is taking actions to motivate and support the geodetic community in using the technology
- Final report of the Working Group will be released in 2026
- Want to get involved: Contact Peter Bauer: peter.bauer@tugraz.at
- Want to know more:

Commission 6
Engineering Surveys
Annual Meeting

Tuesday 17:30
Room P11

The most relevant SDGs related to the presentation and theme of this session

1st relevant SDG

2nd relevant SDG

3rd relevant SDG

SUSTAINABLE DEVELOPMENT GOALS

International Federation of Surveyors supports the Sustainable Development Goals