

Moderní metody dokumentace a vizualizace historických dolů v oblasti Krušných hor

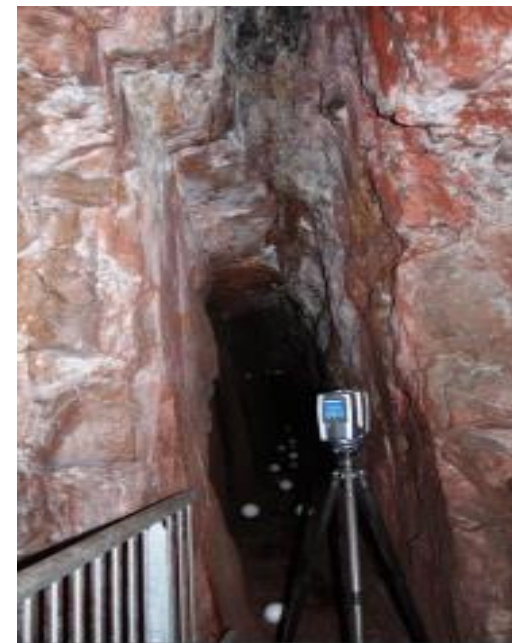
ČVUT v Praze, Fsv, Katedra Geomatiky

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Cíle projektu

- Tvorba 3D modelů vybraných dolů v Krušných horách
 - Johannes
 - Mauricius
 - Kohlreuter
- Vizualizace za pomoci nových technologií
VR, AR, Web portál



Použité metody

- Fotogrammetrie (pouze pro porovnání)

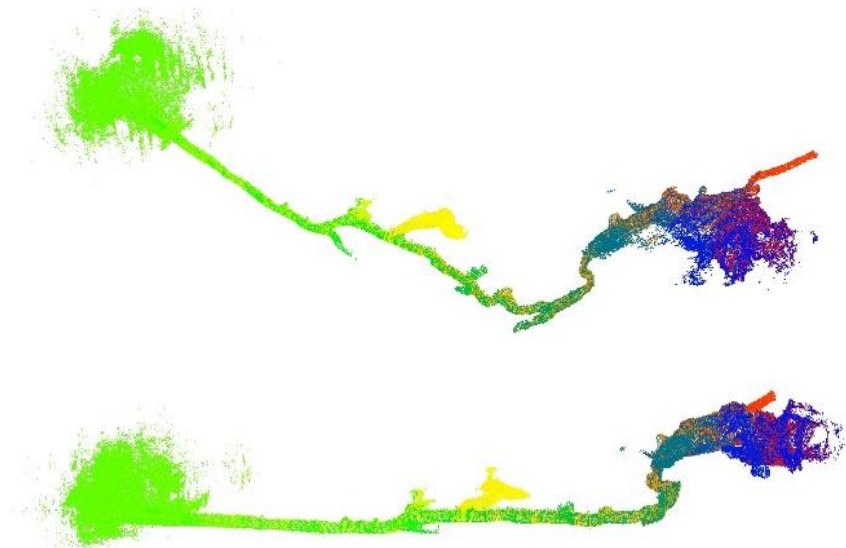


- Laserové skenování

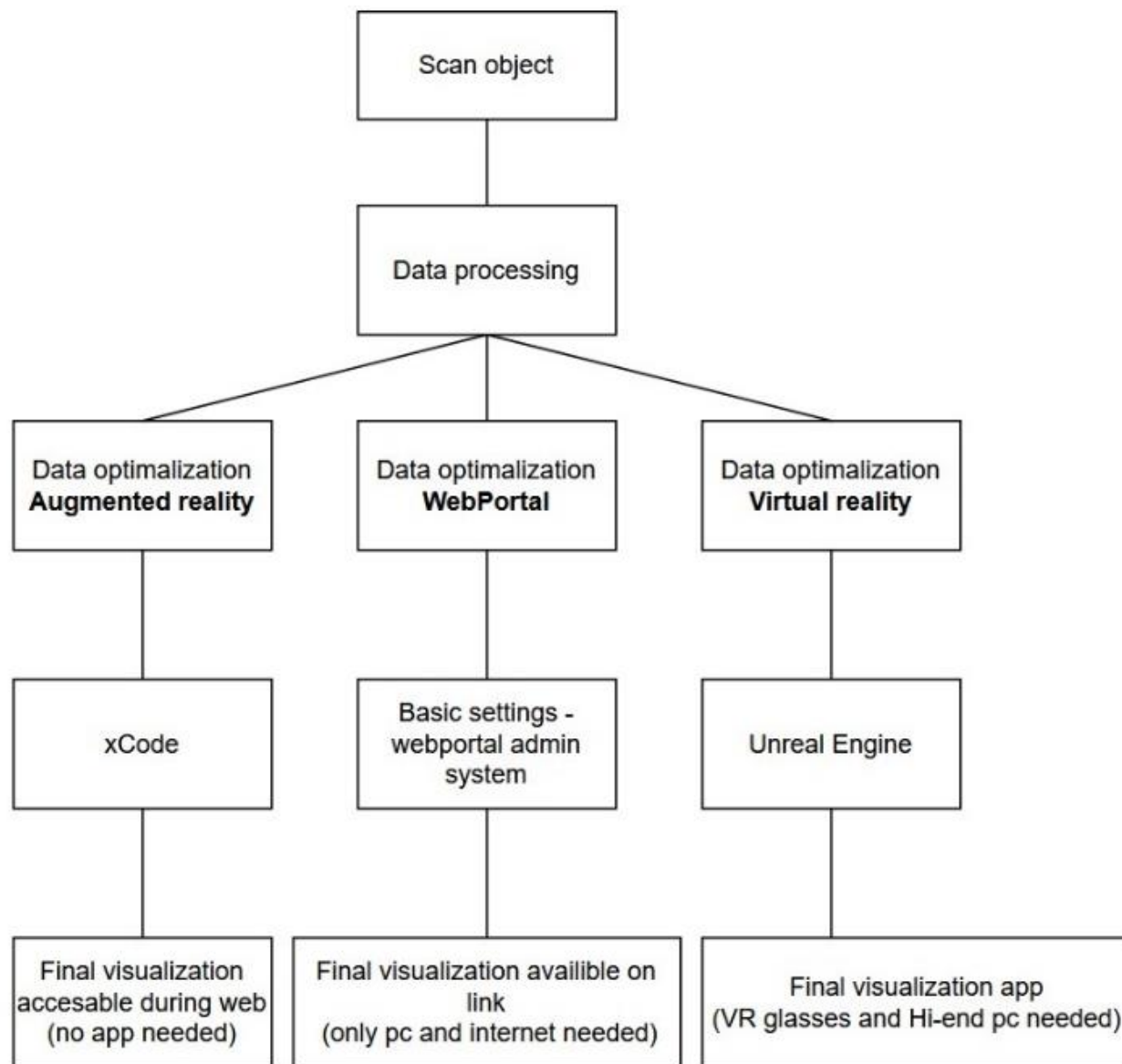
Surphraser 25HSX

Faro Focus 120

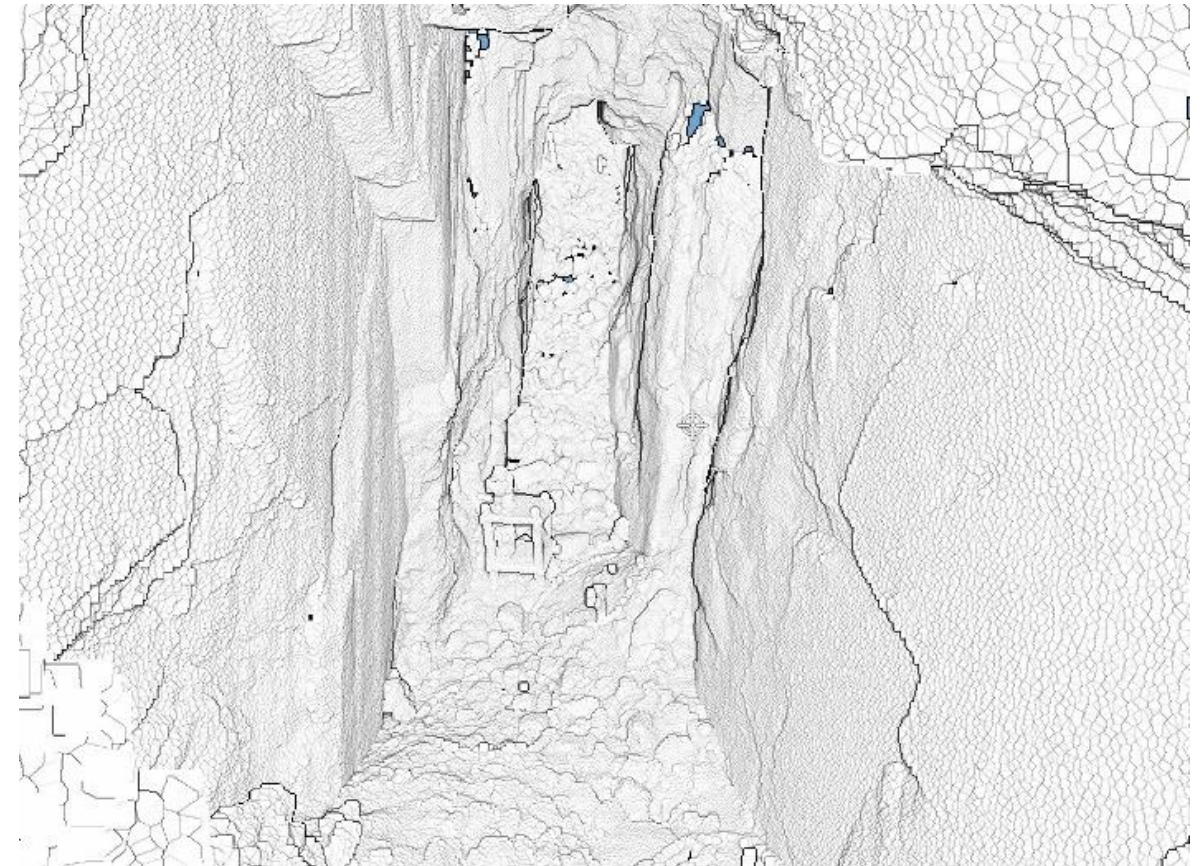
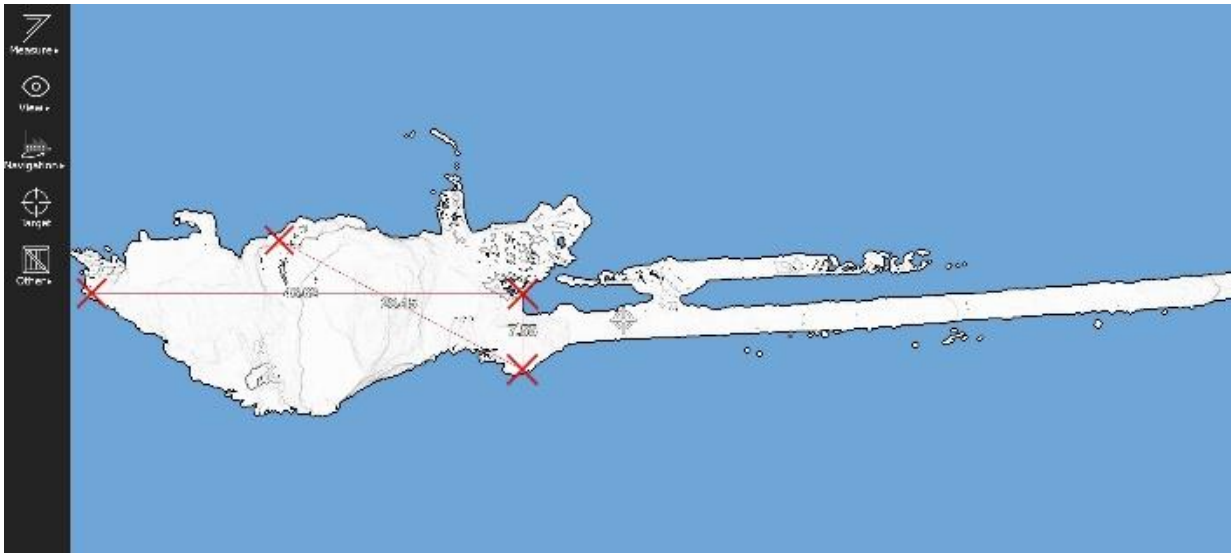
Zeb REVO Go



technology	device	measurement time	Processing time	accuracy	Suitability
Photogrammetry	Canon D20	2 hours / small part only	2 hours	2-5 mm	low
Laser scanning, stop and go	Surphaser 25HSX	6 hours	12 hours without success	1 mm	low
Laser scanning, stop and go	Faro Focus 3D	8 hours	6 hours	2 mm	average
Mobile scanning	ZEB REVO Go	2 hours	2 hours	1-3 cm	high

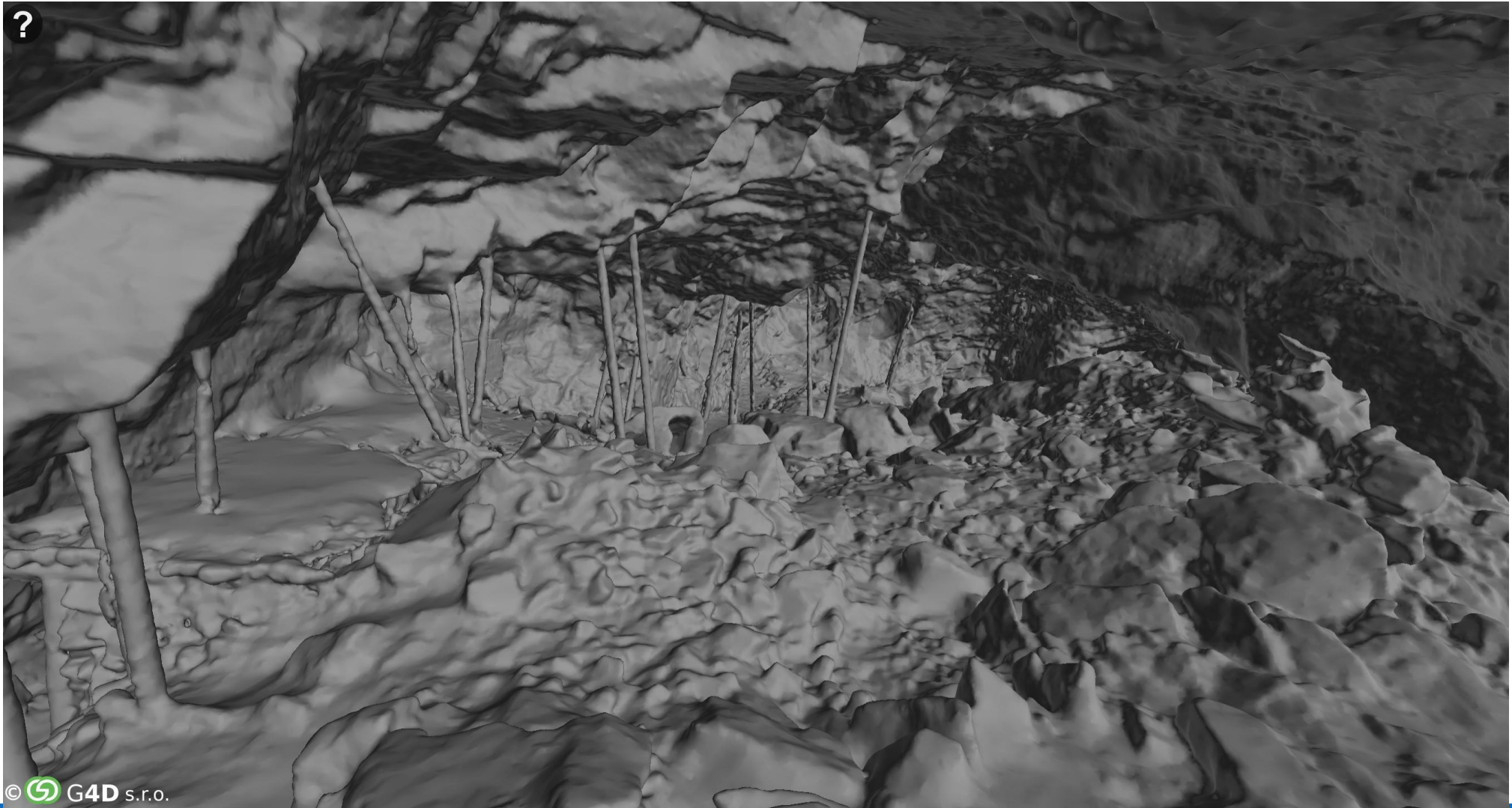


WEB portály



[Web portal link](#)

WEB portál



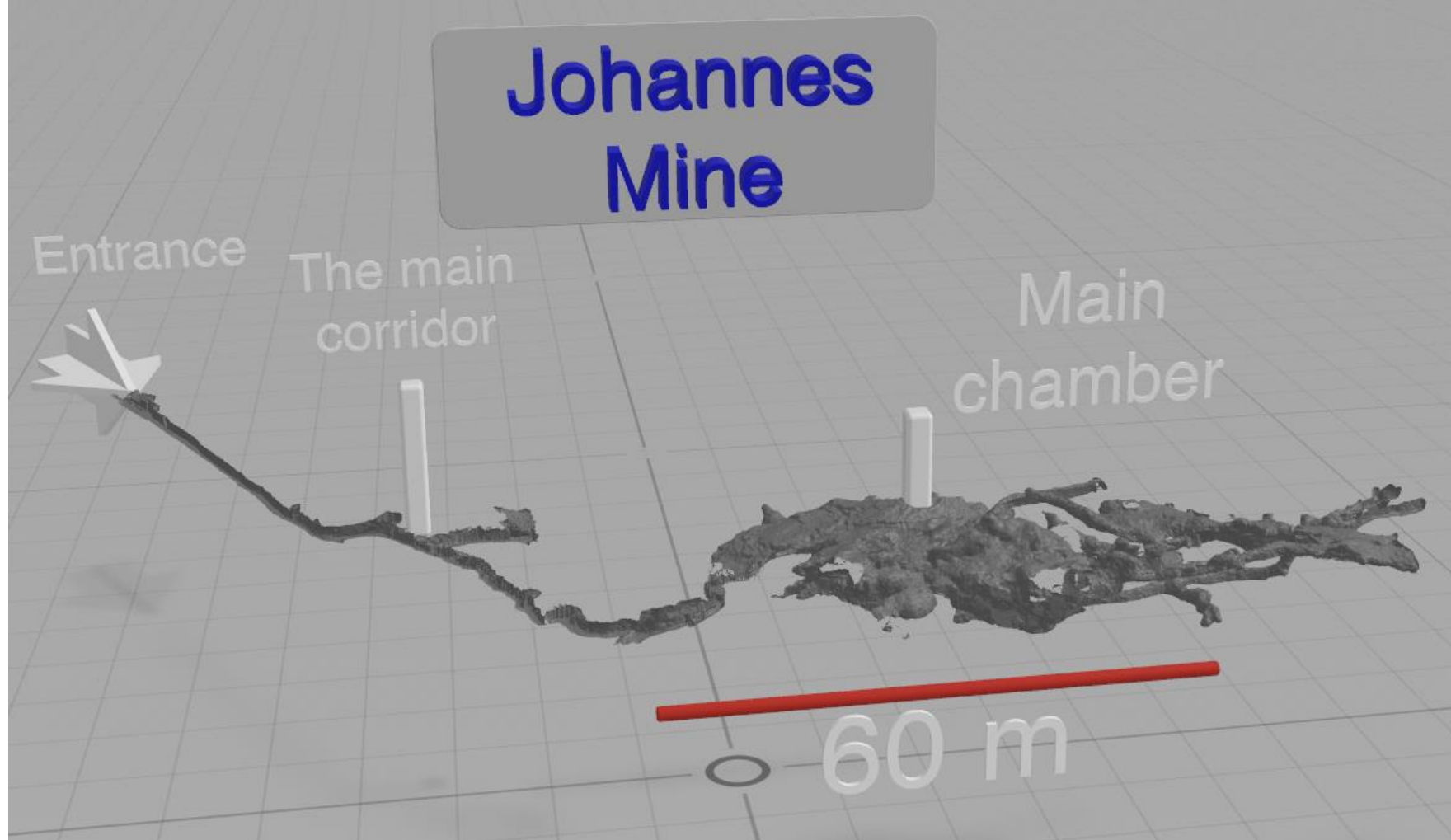
[Web portal](#)



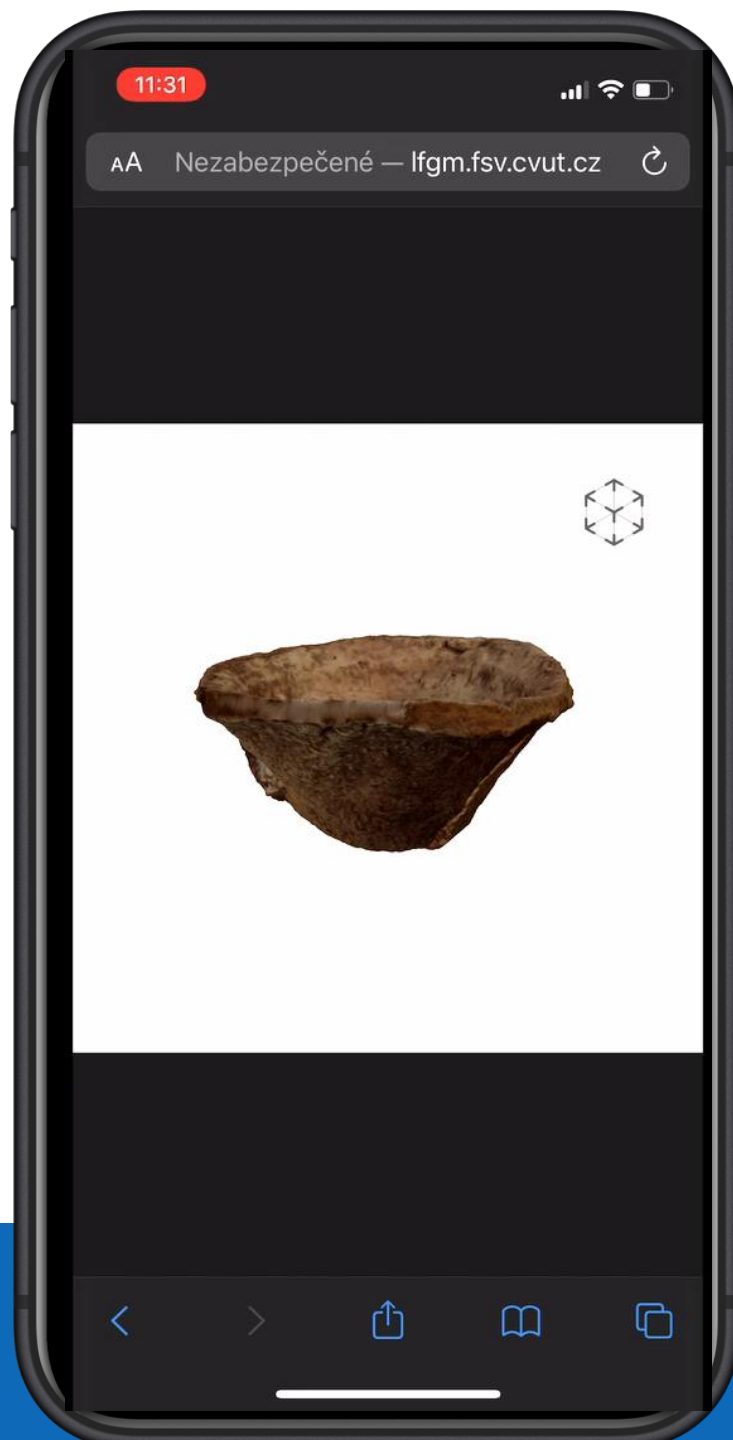
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AR – rozšířená realita

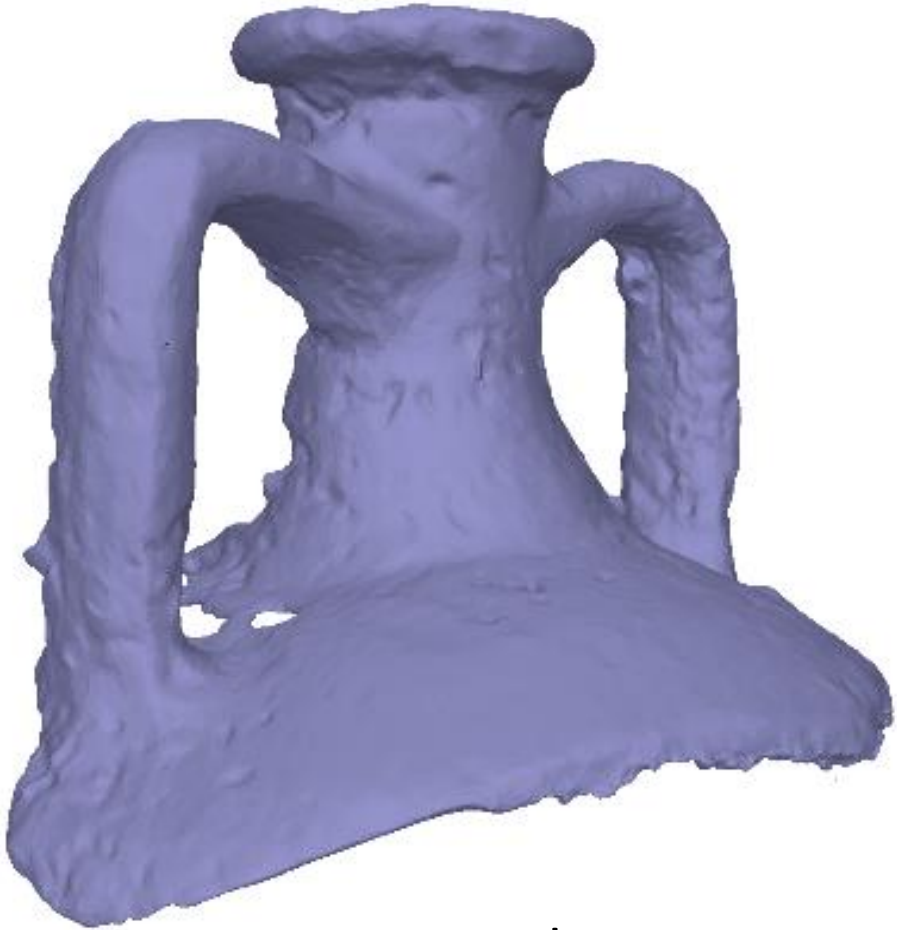


AR ukázka



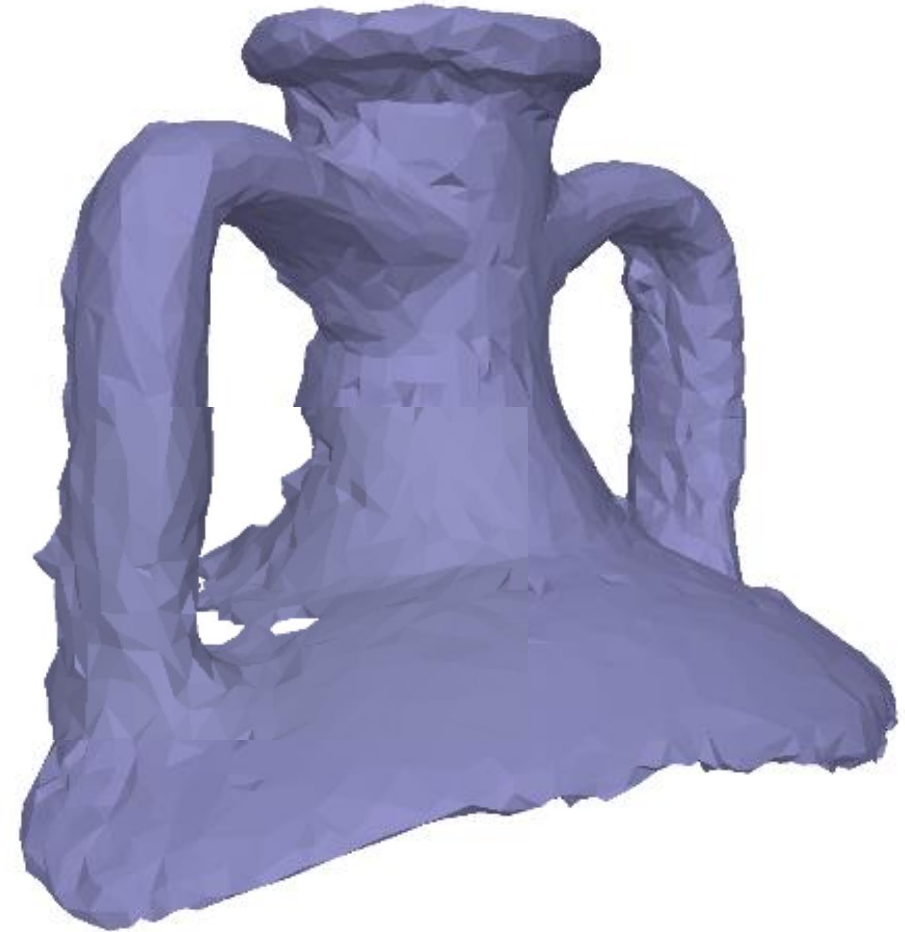
Optimalizace dat

Hi-poly



100,000 polygons

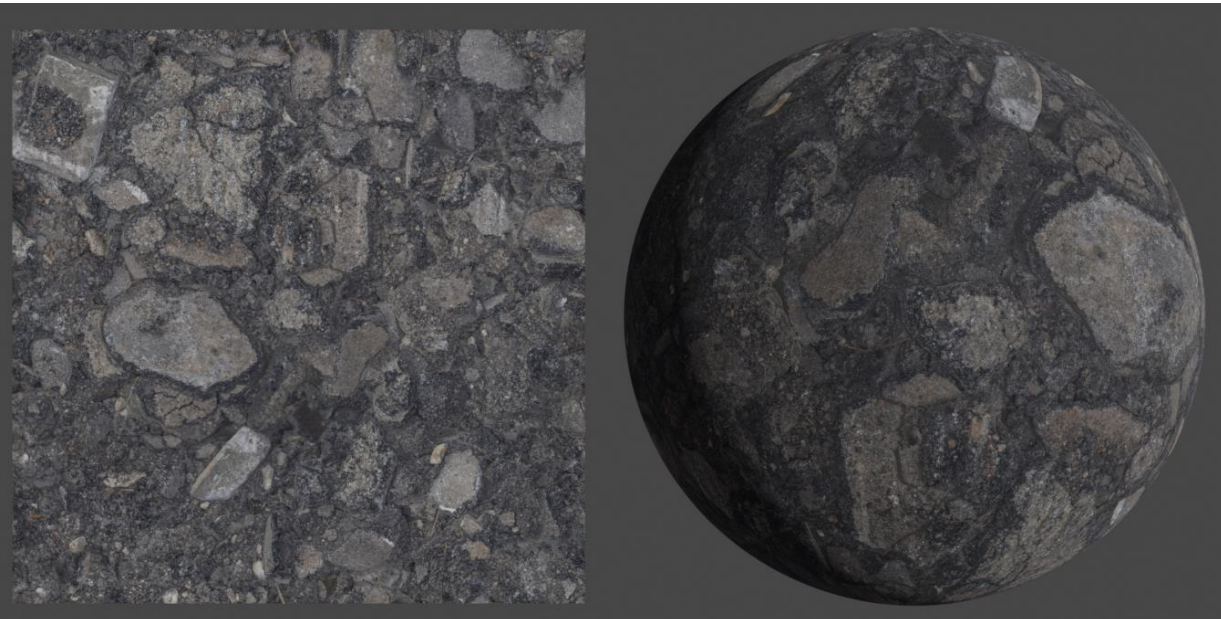
Low-poly



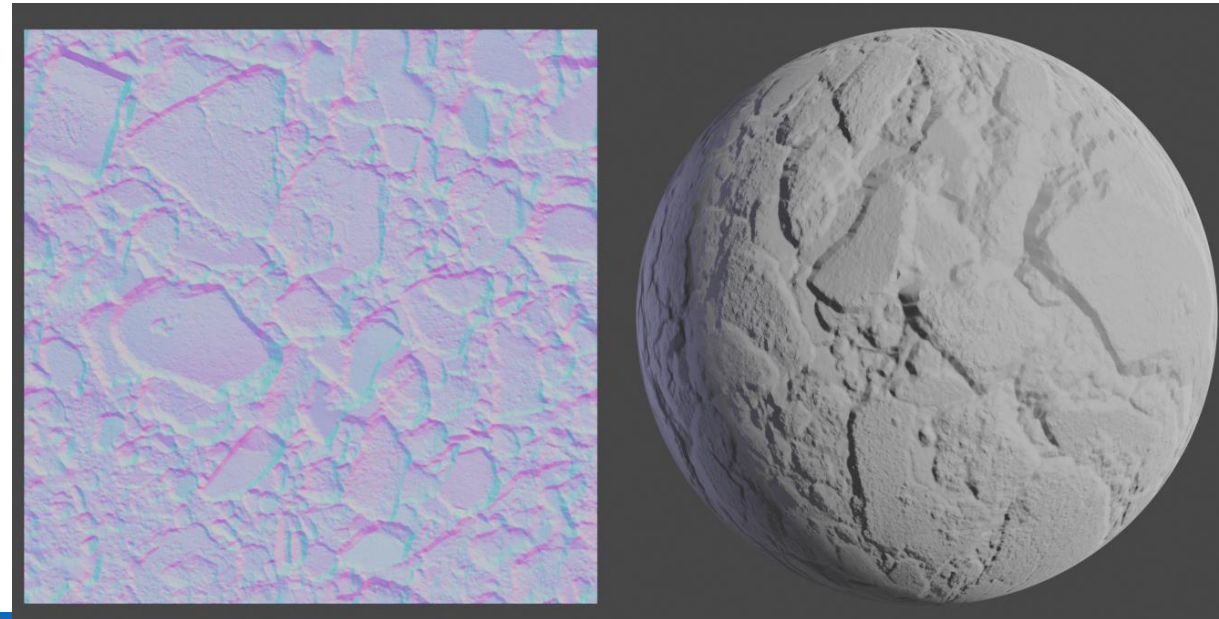
10,000 polygons

Funkce textury

Diffuse texture (RGB)



Normal texture

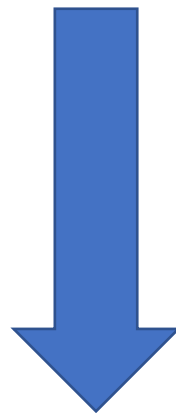


Hi-poly



100,000 polygons

75 % redukce dat



Low-poly

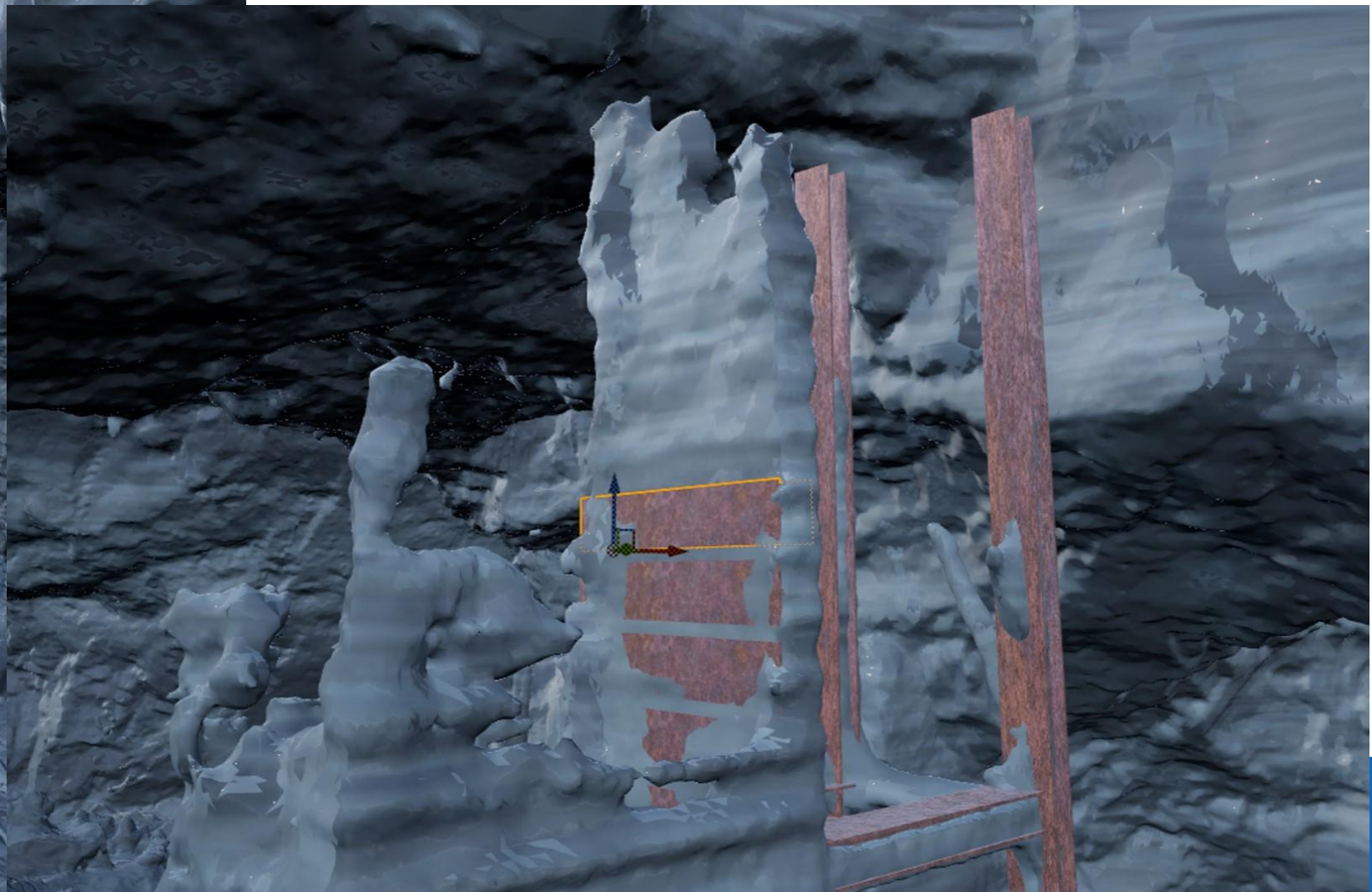


10,000 polygons



- [Video](#)

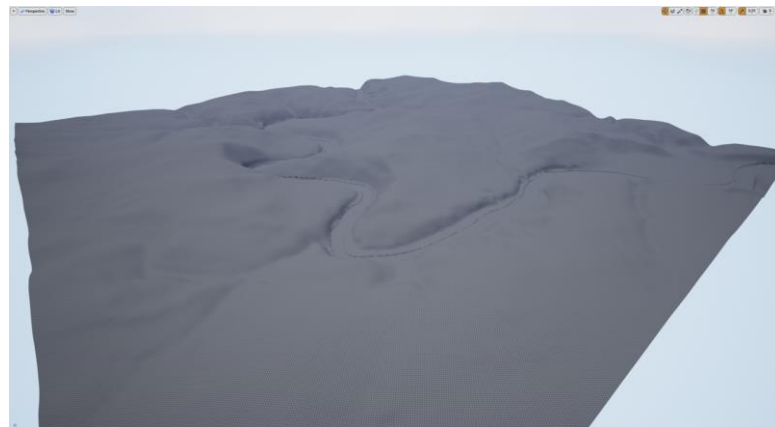
VR – virtuální realita



VR – virtuální realita



Další možné rozšíření
projektu?



Děkuji za pozornost

Karel Pavelka