DEM OF THE MOUNTAIN TERRAIN BASED ON THE GNSS

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United Nations/Philippines Workshop on the Applications of GNSS, 22-26 April 2024, Manila, Philippines.
CONTENT

1. Introduction
2. Measurement and segmentation
3. Analysis
4. Conclusion
5. References
TERRITORY OF THE CENTRAL ASIA

THE TERRITORY OF UZBEKISTAN

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TOPOGRAPHICAL SURVEYING

POLYGONOMETRY

SURFACE LEVELING

LASER SCANNING

MAP CREATION

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GEODE蒂C MEASUREMENTS
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DIGITAL ELEVATION MODEL BASED ON A TOPOGRAPHIC MAP.
Currently, detailed information about the terrain can be obtained using aerospace photography, unmanned aerial vehicles, lidar and satellite navigation systems. But, the most optimal way is the shuttle radar topography mission (SRTM - Shuttle Radar Topography Mission).
A DIGITAL MODEL BASED ON GNSS.
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MEASUREMENT AND SEGMENTATION

KALMAKIR QUARRY
FRAGMENT OF TOPOGRAPHIC MAP
K-42-116

\[ \lambda = 69^\circ 43' 49''.0, \]
\[ \phi = 40^\circ 49' 42''.9, \]
\[ H = 737.9 \text{ m} \]

High-precision coordinates of this benchmark are still used to refine the geodetic network. Reconnaissance of the area was carried out using the K-42-116 topographic map, as well as the Juno 3 mobile navigator.
The measurements were carried out in real time (RTK), where a GNSS rover was used instead of a pole at a distance of 50 - 100 meters from the picket points.
ANALYSIS

➢ The Gauss-Kruger transverse cylindrical projection

➢ Kronstadt benchmark

➢ ± 0.054 m for the base station

➢ ± 0.068 m for the altitude component

➢ overall root mean square error of spatial coordinates is ±0.008 m

➢ the maximum PDOP value of the base station reached 1.359
Segmentations in the GIS “Panorama”
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CONCLUSION
IN THE FUTURE

• Creating of digitization of topographic maps.

• Creating of methods of development of digital elevation models of mountainous areas.

• Creating digital web maps.
REFERENCES


THANK YOU FOR YOUR ATTENTION!

The author is very thankful for invitation and financial support of the United Nations (Office for Outer Space Affairs)