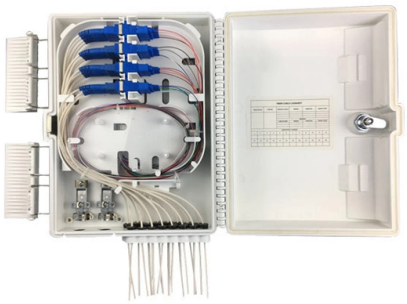
South Sudan Fiber Optic Cable Survey Instrument



Overview

The document outlines the process and importance of conducting a route survey for fiber project implementation, emphasizing that it is crucial for project accuracy and successful execution.

Key Takeaways

Fiber optic cable surveys in South Sudan rely on GIS mapping, CAD software, and specialized field instruments to plan and design high-speed network routes.

Overview of Fiber Optic Projects in South Sudan

South Sudan is actively developing its national fiber optic network, with a $9 million budget approved for the design phase of the project. This initiative aims to improve internet access, reduce reliance on satellite connections, and bridge the urban-rural digital divide. The project involves detailed planning, route surveys, and construction drawings to ensure reliable deployment across diverse terrains.

Key Survey Instruments and Tools1. Geographic Information Systems (GIS) and Mapping Tools GIS software is essential for visualizing potential fiber optic routes, analyzing terrain, and identifying obstacles such as unstable soils or flood-prone areas. Surveyors use GIS to integrate aerial imagery, satellite data, and existing infrastructure maps to optimize cable paths.

2.

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CAD Software for Route Planning Computer-

Aided Design (CAD) applications like AutoCAD MAP and AutoCAD Civil 3D are used to create detailed construction drawings. These drawings include trenching plans, cable pulling paths, manhole locations, and joint placements, ensuring precise implementation. 3.

Field Survey Instruments

Total Stations and Theodolites: Measure angles and distances accurately for route alignment.

GP

S Survey Equipment: Provides geospatial coordinates for cable routes and infrastructure points. Cable Route Profilers: Assess ground conditions and detect obstacles along the planned path.

Optical Time-

Domain Reflectometers (OTDRs): Test fiber continuity and signal loss during installation and maintenance. Cable Blowing Machines and Pulling Equipment: Used in conjunction with survey data to deploy fiber in ducts or micro-trenches. 4.

Survey Documentation Tools Survey teams generate reports with distances, clearances, and equipment requirements. These reports guide contractors and ensure compliance with local regulations and safety standards.

Process of Fiber Optic Survey in South Sudan

Preliminary Survey: Identify optimal routes, avoiding unstable or restricted areas. Detailed Survey: Measure distances, mark manholes, joints, and turns, and assess soil conditions. Design and Planning: Use GIS and CAD to produce construction drawings and route plans.

Approval and Clearance: Obtain permissions from local authorities before installation. Deployment and Testing: Install fiber using specialized equipment and verify performance with OTDRs and other testing instruments.

Conclusion

Deploying fiber optic networks in South Sudan requires a combination of GIS mapping, CAD software, and specialized field instruments to ensure accurate route planning, safe installation, and reliable network performance. These tools collectively support the country's efforts to modernize its digital infrastructure and expand high-speed internet access.

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