

Request for Proposal (RFP)



Project Name: Provision of Fiber Locator System and Fiber Monitoring System for PDC Telecommunication Services Sdn Bhd (PDC Telco).

RFP Number: PDCTELCO/RFP-NGN/002/2026

Date Issued: 21st August 2026

1. Executive Summary

PDC Telco's network infrastructure forms the backbone of Penang's digital connectivity ecosystem. As a telecommunications infrastructure provider, maintaining the availability, resilience, security and physical integrity of its fiber-optic infrastructure is strategically important.

PDC Telco is issuing this Request for Proposal (RFP) to procure a Fiber Locator System and a Dark Fiber Monitoring System to improve the identification, mapping, protection, monitoring, maintenance and troubleshooting of its underground fiber-optic network.

The proposed solution shall combine practical field route identification and physical disturbance detection with continuous or scheduled monitoring of designated dark fiber, non-service-bearing fiber strands. The solution shall support centralized management, GIS/map visualization, fault/event localization and field operations.

2. Company Overview

PDC Telecommunications Services Sdn Bhd (PDC Telco) is a telecommunications infrastructure provider supporting the digital connectivity ecosystem within the State of Penang. The organization plays a key role in enabling broadband infrastructure, network services, and digital connectivity for government agencies, enterprises, and strategic development initiatives.

PDC Telco remains dedicated to advancing its network infrastructure and operational excellence to support dependable and resilient digital connectivity. The proposed Fiber Locator and Dark Fiber Monitoring solution will enable proactive network safeguarding, accurate fiber route verification, rapid fault detection and localization, and more efficient maintenance and operational activities.

3. Project Requirements and Scope

The Bidder shall provide a complete, fully operational solution, including all necessary hardware, software, accessories, installation services, system configuration, optical connectivity, testing, commissioning, training, documentation, and warranty support required for the successful deployment and operation of the proposed solution.

3.1. Fiber Locator System

The Fiber Locator System shall include, but not be limited to, the following components and capabilities:

- Distributed Fiber Sensing (DFS)/Fiber Locator equipment utilizing existing optical fiber infrastructure as the sensing medium, or an equivalent technology providing distributed sensing capabilities.
- Field control unit, user interface devices, and all associated accessories required for operation.
- Integrated GPS/GNSS functionality for accurate route positioning and location tracking.
- Web-based and/or mobile-enabled mapping and visualization interface.
- Mobile application to support field operations and route identification activities, where applicable.
- Battery packs, power supply units, carrying cases, and other operational accessories, where required.

3.2. Dark Fiber Monitoring System

The Dark Fiber Monitoring System shall include, but not be limited to, the following components and capabilities:

- Dark fiber monitoring equipment based on Optical Time Domain Reflectometry (OTDR) technology or an equivalent solution.
- Optical switching functionality, where required to support monitoring of multiple fiber strands.
- Centralized monitoring and management software platform.
- Real-time alarm generation and event management capabilities.
- Automated fault detection and localization functionality.
- Historical trace storage, retrieval, and comparative analysis features.
- GIS-enabled mapping and visualization interface.
- Network communication interfaces for integration with operational monitoring environments.

The Bidder shall clearly distinguish all optional features and functionalities from the mandatory requirements specified herein. Any capabilities related to live or

in-service fiber monitoring shall be presented separately and shall not be considered part of the mandatory dark-fiber monitoring requirements.

4. Technical Requirements

4.1. Fiber Locator System

Ref.	Requirement	Priority
FL-01	Ability to identify and verify underground fiber-optic cable routes.	Mandatory
FL-02	Ability to determine the location of fiber assets using existing infrastructure or an equivalent method.	Mandatory
FL-03	Minimize the need for excavation or routine manhole opening during route identification activities.	Mandatory
FL-04	Provide graphical visualization of route and event information.	Mandatory
FL-05	Support centralized management and monitoring.	Mandatory
FL-06	Support map-based visualization (GIS, web map, Google Maps, or equivalent).	Preferred
FL-07	Support mobile or field-based operation and navigation.	Preferred
FL-08	Support configurable detection parameters or event thresholds.	Preferred
FL-09	Provide remote diagnostics, assistance, or troubleshooting capabilities.	Preferred

The bidder shall provide:

- Technology description.
- Route identification methodology.
- Monitoring/detection coverage distance.
- Event location accuracy.
- Supported fiber types.
- Operational limitations.
- Recommended deployment architecture.

4.2. Dark Fiber Monitoring System

Ref.	Requirement	Priority
FM-01	Monitor designated dark/non-service-bearing fiber links.	Mandatory
FM-02	Provide automated detection of fiber faults or abnormalities.	Mandatory
FM-03	Provide fault location or distance-to-fault calculation.	Mandatory
FM-04	Detect fiber cuts, breaks, or significant degradation events.	Mandatory
FM-05	Record and maintain historical monitoring data and events.	Mandatory
FM-06	Support configurable alarms and notifications.	Mandatory
FM-07	Provide a centralized monitoring and management platform.	Mandatory
FM-08	Maintain alarm, event, and audit history.	Mandatory
FM-09	Support role-based user access control.	Mandatory
FM-10	Support monitoring of long-distance fiber links suitable for telecom network applications.	Mandatory
FM-11	Provide graphical visualization of fiber status and fault locations.	Mandatory
FM-12	Support integration with external management systems through standard interfaces.	Preferred
FM-13	Support GIS or map-based visualization.	Preferred
FM-14	Support mobile access to alarms and event information.	Preferred
FM-15	Support email, SMS, or equivalent notification methods.	Preferred
FM-16	Support multiple monitoring wavelengths and future scalability.	Preferred

The bidder shall provide:

- Monitoring technology used (OTDR or equivalent).
- Maximum monitoring distance.
- Measurement accuracy.
- Fault location accuracy.
- Supported wavelengths.
- Alarm and reporting capabilities.
- Scalability (number of fibers/ports supported).
- Integration options (SNMP, API, etc.).

5. Installation, Commissioning and Acceptance

The successful Bidder shall be responsible for delivering a complete end-to-end implementation of the proposed solution, including system design, equipment installation, optical connectivity, software and network configuration, GIS/map configuration, baseline fiber measurements, alarm and threshold configuration, testing, commissioning, Site Acceptance Testing (SAT), and the submission of comprehensive as-built documentation.

The Bidder shall demonstrate the functionality and performance of the proposed solution during acceptance testing, including but not limited to the following:

5.1. Fiber Locator System

- Verification and identification of underground fiber-optic cable routes.
- Demonstration of sensing and monitoring performance over a minimum distance of 40 km, subject to the proposed solution and agreed test conditions.
- Detection and localization of simulated disturbances or events along the fiber route.
- Display of route and event information through GPS/GNSS-enabled location services and map-based visualization.
- Mobile navigation capabilities to identified assets or event locations, where included in the proposed solution.

5.2. Dark Fiber Monitoring System

- Verification of monitoring functionality for designated dark or non-service-bearing fiber links.
- Establishment and recording of baseline fiber measurements.
- Detection and localization of simulated fiber cuts, breaks, or fault conditions.
- Detection of abnormal attenuation, loss events, or reflective anomalies.
- Generation and management of alarms and event notifications.
- Historical trace storage, retrieval, and comparison capabilities.
- GIS/map-based visualization and mobile alarm navigation functions, where provided as part of the proposed solution.

Proof of Concept (PoC)

PDC Telco reserves the right to require a Proof of Concept (PoC) prior to contract award. The PoC may be conducted to validate the proposed solution's capabilities, including route identification, sensing coverage and performance, event detection and

localization, dark fiber monitoring, fault management, and integration with mapping, GIS, and mobile operation functions.

6. Training and Documentation

The successful Bidder shall provide comprehensive training and knowledge transfer to ensure effective operation, administration, and maintenance of the proposed solution by both network engineering and field operations personnel.

6.1. Network Engineer Training

Training for network engineers shall cover, at a minimum:

- System administration and operation of the Dark Fiber Monitoring System.
- Interpretation and analysis of OTDR measurements and traces.
- Fault detection, localization, and diagnostic procedures.
- Alarm management, event analysis, and reporting.
- Historical trace storage, comparison, and trend analysis.
- Configuration and operation of centralized monitoring platforms, including map/GIS interfaces.
- System maintenance, performance monitoring, and troubleshooting procedures.

6.2 Field Technician Training

Training for field technicians shall cover, at a minimum:

- Operation of the Fiber Locator System.
- Fiber route identification and verification procedures.
- Detection and interpretation of field events or disturbances.
- Use of GPS/GNSS and map-based visualization tools.
- Mobile application usage and navigation to asset or event locations, where applicable.
- Field troubleshooting, fault investigation, and operational best practices.

6.3 Documentation Requirements

The Bidder shall provide complete and up-to-date documentation for the proposed solution, including but not limited to:

- Product datasheets and technical specifications.
- User manuals and operator guides.
- Installation and commissioning manuals.
- System configuration and administration guides.

- Maintenance and preventive maintenance procedures.
- Troubleshooting and fault diagnosis guides.
- System architecture and solution design documentation.
- Optical connectivity and connection diagrams.
- Network integration documentation.
- Training materials and course manuals.
- Test, commissioning, and Site Acceptance Test (SAT) reports.
- As-built documentation reflecting the final deployed configuration.

All documentation shall be provided in electronic format and shall accurately reflect the delivered system and configuration at the time of project handover.

7. Warranty, Maintenance and Support Requirements

The proposed solution shall be covered by a minimum warranty period of **twenty-four (24) months** from the date of successful commissioning and final acceptance by PDC Telco.

The warranty shall cover defects in hardware, software, and firmware, and shall include corrective maintenance, technical assistance, and replacement of defective components in accordance with the supplier's standard warranty terms and conditions. The Bidder shall provide details of the following support and maintenance services:

- Technical support service levels and response times.
- On-site support response and escalation procedures.
- Availability of local spare parts and replacement equipment.
- Repair and replacement turnaround times.
- Software and firmware update, patch, and upgrade policies.
- Product lifecycle management, including product roadmap and end-of-support/end-of-life policies.

The Bidder shall also describe its support organization, service coverage, and escalation processes for issue resolution.

8. Bidder Qualifications and Experience

To demonstrate its capability to successfully deliver and support the proposed solution, the Bidder shall provide the following information as part of its proposal:

- Company profile, including organization background, business activities, and relevant experience.

- Manufacturer profile, including corporate information and experience in delivering similar solutions.
- Detailed product information, including technical specifications, features, and architecture of the proposed solution.
- Relevant references involving telecommunications operators, utility companies, or organizations operating fiber-optic networks.
- A minimum of three (3) references for similar deployments completed within the last five (5) years, including project scope, deployment size, customer name, and contact details (subject to customer approval).
- Description of support capabilities, service centers, technical personnel, and spare-parts availability.
- Proposed project organization and key personnel, including project manager, technical specialists, and support resources assigned to the project.
- Manufacturer authorization, partnership certification, or reseller accreditation, where applicable, confirming the Bidder's authority to supply, implement, and support the proposed solution.

Preference will be given to solutions that have been successfully deployed in operational telecommunications, utility, or critical infrastructure fiber-optic networks and can demonstrate proven performance, reliability, and operational effectiveness under real-world conditions.

9. Technical Compliance Matrix

All Bidders shall complete the Technical Compliance Matrix provided by PDC Telco and submit it as part of their proposal. The Bidder shall clearly indicate compliance with each requirement and provide sufficient supporting information to facilitate the technical evaluation process.

For each requirement, the Bidder shall provide:

- Compliance status (e.g., Comply, Partially Comply, or Does Not Comply).
- Description of the proposed solution and offered specifications.
- Reference to supporting documentation, including product datasheets, technical manuals, architecture documents, or other relevant evidence.
- Details of any deviations, exceptions, assumptions, prerequisites, or alternative approaches, where applicable.

The Bidder is responsible for ensuring that all claims of compliance are substantiated by supporting documentation. PDC Telco reserves the right to request additional

information, demonstrations, clarifications, or proof of compliance during the evaluation process.

A sample compliance matrix format is shown below:

Ref.	Requirement	Compliance (Y/N)	Offered Specification / Remarks	Supporting Reference
FL-01	Ability to identify and verify underground fiber-optic cable routes			
FL-02	Ability to determine the location of fiber assets using existing infrastructure or equivalent method			
FM-01	Monitor designated dark/non-service-bearing fiber links			
FM-02	Provide automated detection of fiber faults or abnormalities			

10. Evaluation Criteria

Proposals will be evaluated based on the criteria and weightings outlined below. PDC Telco reserves the right to request additional clarifications, product demonstrations, Proof of Concept (PoC) activities, or supporting documentation during the evaluation process.

Evaluation Category	Weighting	Key Evaluation Criteria
Technical Compliance	20%	Compliance with mandatory requirements, completeness of the proposed solution, and quality of the offered technical specifications.
Fiber Locator Solution	20%	Route identification capability, sensing coverage, disturbance detection, event localization accuracy, ease of field operation, and overall functionality.
Dark Fiber Monitoring Solution	20%	Monitoring capability, fault detection and localization performance, historical analysis features, alarm management, scalability, and operational effectiveness.
GIS, Mapping and Mobile Functionality	10%	Map-based visualization, GIS integration, navigation capabilities, mobile accessibility, and operational usability.
Proof of Concept (PoC) / Demonstration	10%	Successful demonstration of key functionalities, performance validation, ease of use, and compliance with operational requirements.
Bidder Experience and Support	10%	Relevant project experience, deployment references, manufacturer support, proposed project team, and technical support capability.

Warranty and After-Sales Support	5%	Warranty coverage, service levels, response times, spare-parts availability, maintenance services, and product lifecycle support.
Commercial Proposal	5%	Overall cost competitiveness, value for money, total cost of ownership, and long-term operational benefits.
Total	100%	

Evaluation Notes

- Bidders must achieve full compliance with all mandatory requirements to be considered for further evaluation.
- Preferred requirements will be assessed as value-added features and may contribute to a higher technical score.
- Demonstrated performance during PoC, system demonstrations, or reference checks may be considered as part of the overall technical evaluation.
- PDC Telco reserves the right to verify any information, references, certifications, or performance claims submitted by the Bidder.
- The contract may not necessarily be awarded to the lowest-priced proposal. The final award shall be based on the overall best-value solution, taking into consideration technical compliance, performance, support capability, project experience, and commercial competitiveness.

PDC Telco is under no obligation to accept the lowest-priced proposal. The final evaluation will consider a range of factors, including technical performance, field-proven capabilities, reliability, interoperability, scalability, lifecycle costs, and the bidder's support and service capabilities.

11. Non-Disclosure Agreement (NDA)

To safeguard the confidentiality of information exchanged during the RFP evaluation and proposal process, bidders shall comply with the following NDA requirements:

- Bidders that do not have a valid NDA currently in force with PDC Telco shall submit a duly executed Non-Disclosure Agreement (NDA) signed by an authorized representative as part of their proposal submission.
- Bidders that have already executed an NDA with PDC Telco shall provide a copy of the existing NDA, including all relevant stamped and executed pages, as evidence of a valid and binding confidentiality agreement.

Failure to provide the required NDA documentation may result in the proposal being deemed non-compliant.

The NDA template is available for download as part of the RFP documentation issued by PDC Telco. Bidders are responsible for ensuring that the submitted NDA documentation is valid, complete, and signed by authorized signatories.

12. Key Dates & Contact Information

- **RFP Issued:** 21st August 2026
- **Deadline for Submission:** 03rd September 2026 (before 12.00pm)
- **Contact Person:** Muhammad Firdaus bin Hashim / firdaus@pdctelco.com.my

13. Submission Instructions

To complete your submission, please:

RFP document that have been completed should be placed in a sealed envelope and labeled "**PDCTELCO/RFP-NGN/002/2026: Provision of Fiber Locator and Fiber Monitoring for PDC Telecommunication Services Sdn Bhd (PDC Telco)**". The documents must be submitted to the below-mentioned office address on or before **12:00 noon, 03rd September 2026**.

Venue	:		PDC Telecommunication Services Sdn. Bhd. 1-12A-12A, SUNTECH@Penang Cybercity, Lintang Mayang Pasir 3, Bandar Bayan Baru 11950 Bayan Lepas, Pulau Pinang Tel No : 04-640 6644 Fax No : 04-640 6640
Date/Time	:	Monday – Friday Lunch Time	(9.00am-05.00pm) (Monday – Thursday: 1.00pm-2.00pm) (Friday: 12.15pm-2.45pm)

END OF RFP