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KEVAJOPA TECHNOLOGIES LIMITED

Make Smarter, Faster, Secure.

PROFESSIONAL TRAINING PROSPECTUS

Fibre Optic Technologies
for Network Operators

A three-week intermediate programme in optical fibre plant, splicing, OTDR testing, FTTx/GPON deployment and fault management — built for staff who operate and maintain live networks.

Programme code	FOT-2026-014
Duration	3 weeks
Level	Intermediate
Target audience	Technical staff of network operators, ISPs and infrastructure contractors
Delivery	Face-to-face, classroom and hands-on laboratory — at Kevajopa, Dar es Salaam, or on the client's premises
Contact hours	Option A (Intensive): 75 hours · Option B (In-service): 30 hours
Class size	Maximum 12 participants per intake (practical stations are shared 2:1)
Language	English, with Kiswahili technical clarification in the lab
Award	Kevajopa Professional Certificate in Fibre Optic Technologies
Intake	Rolling intakes; start date confirmed on registration

ENQUIRIES AND REGISTRATION

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Telephone / WhatsApp: +255 782 444 470 · Email: info@kevajopa.co.tz
Web: www.kevajopa.co.tz · Training portal: learn.kevajopa.co.tz

About the Programme

About Kevajopa Technologies Limited

Kevajopa Technologies Limited is a Tanzanian ICT company incorporated in Dar es Salaam in February 2024 (Registration No. 172177301). The company delivers ICT solutions, software development, networking and infrastructure, electronic security systems and professional technical training. Kevajopa is an authorised Hikvision Dealer and Training Partner and an active supplier on the Government e-Procurement (NeST) platform.

Training is delivered by practitioners who install, commission and maintain live infrastructure. Every programme is built around equipment and situations participants will meet on the job rather than around a textbook syllabus.

Programme Overview

Optical fibre now carries almost all backbone, metro and last-mile capacity in Tanzania, and operators are extending FTTH and FTTB coverage faster than they can build the technical bench to support it. Most faults on a fibre network are not exotic: they are bad splices, contaminated connectors, poorly documented routes, drop cables damaged by third parties, and optical budgets that were marginal on the day of commissioning.

This programme is aimed squarely at that reality. Over three weeks participants move from optical fundamentals and cable plant, through fusion splicing and OTDR-based certification, to FTTx/GPON deployment, subscriber troubleshooting and restoration under service-level pressure. Roughly sixty per cent of programme time is spent on equipment, not slides.

It is set at intermediate level. Participants are expected to arrive with working knowledge of data networks and some site exposure; the programme does not spend time on basic IP networking, and it assumes participants are comfortable being taken through loss-budget arithmetic and standards references.

Who This Programme Is For

- Fibre and transmission technicians employed by network operators, ISPs and tower companies
- NOC engineers who diagnose optical alarms and dispatch field teams but have never held an OTDR
- OSP survey, installation and maintenance crews moving from copper or coaxial plant to fibre
- FTTH installation teams and their supervisors, including subcontracted installers
- Project engineers and QA staff who accept fibre links built by contractors and must judge whether a test report is credible
- Enterprise and campus network staff responsible for in-building fibre backbone and data-centre cabling

Entry Requirements

- A certificate, diploma or degree in telecommunications, electronics, computer engineering, IT or an equivalent field; or at least one year of documented field experience in network installation or maintenance
- Working understanding of network fundamentals — cabling, switching, IP addressing — at the level of a completed CCNA-equivalent or Kevajopa's Digital Networking programme
- Physical fitness and willingness to take part in outdoor practical work, including ladder and duct exercises
- Personal protective equipment as listed under Laboratory and Equipment, or acceptance of Kevajopa-issued PPE for the duration

Applicants who do not meet the academic requirement may be admitted on the strength of a supervisor's recommendation and a short pre-entry assessment.

Learning Outcomes

On successful completion, a participant will be able to:

OUTCOME	DESCRIPTION
Specify plant	Select the correct fibre type, cable construction and connector for a given route — buried, aerial, ADSS, micro-duct or in-building — and justify the choice against standards and environment.
Calculate budgets	Build an optical loss budget from first principles for a point-to-point link or a PON, and state before construction whether the design will pass.
Splice to standard	Prepare, cleave and fusion-splice single-mode fibre repeatably below 0.10 dB, manage splice trays and closures, and complete a mechanical splice when a splicer is unavailable.
Certify a link	Perform Tier 1 insertion-loss testing and Tier 2 OTDR certification, choose acquisition parameters deliberately, and read an event table without being misled by ghosts, gainers or dead zones.
Localise faults	Convert an OTDR distance-to-fault into a physical location on the route, restore service under time pressure, and document what was done.
Deploy FTTx	Dimension and commission a GPON access branch — OLT, splitters, FDT/FAT, drop and ONT — and diagnose subscriber-side optical complaints from RX power and OLT alarms.
Inspect and accept	Apply IEC 61300-3-35 connector inspection criteria and judge whether a contractor's acceptance test pack is genuine and complete.
Work safely	Apply laser safety, fibre-shard handling, roadside and working-at-height precautions in line with employer HSE requirements.

Curriculum

The programme runs in three thematic weeks. Each week comprises five sessions; session length depends on the delivery option selected (see Schedule Options).

Week 1 — Optical Fibre Plant, Termination and Splicing

SESSION	TOPIC	CONTENT AND PRACTICAL WORK
1.1	**Optical fundamentals for operators**	Light propagation and total internal reflection; single-mode versus multimode; ITU-T G.652.D and G.657.A1/A2 bend-insensitive fibre; attenuation, chromatic and polarisation-mode dispersion; the 1310 / 1490 / 1550 / 1625 nm windows and why each is used. Loss-budget arithmetic in dB, dBm and dB/km.
1.2	**Cable construction and outside plant**	Loose-tube, tight-buffered, ribbon, armoured, ADSS, figure-8 and micro-duct cable; TIA-598 and IEC fibre colour coding; buried, ducted and aerial route practice; blown-fibre installation; pulling tension, bend radius and slack management; wayleave, road-reserve and TANESCO pole considerations in Tanzania.
1.3	**Termination, connectors and enclosures**	SC, LC, FC and E2000 connectors; UPC versus APC and where each belongs; pigtail-and-splice versus field-installable connectors; ODF, patch panel, splice closure and splice tray build; labelling and route documentation conventions. Practical: full ODF termination and tray build.
1.4	**Fusion splicing laboratory**	Fibre preparation, stripping, cleaning and cleaving; cleave angle and its effect on splice loss; core alignment versus cladding alignment splicers; arc calibration; splice loss estimation and why the splicer's own estimate is not a measurement; heat-shrink protection and tray routing. Practical: repeat splicing to a graded loss target.
1.5	**Mechanical splicing, cleaning and inspection**	Mechanical splice assembly and its correct use case; field-installable connector termination; connector contamination as the leading cause of link failure; fibre-scope inspection and IEC 61300-3-35 pass/fail zones; cleaning tools and discipline. Practical: inspect, fail, clean and re-inspect contaminated connectors.

Week 2 — Testing, Certification and Fault Management

SESSION	TOPIC	CONTENT AND PRACTICAL WORK
2.1	**Insertion loss testing (Tier 1)**	Optical light source and power meter; absolute versus relative measurement; one-jumper, two-jumper and three-jumper reference methods and the error each introduces; bidirectional testing; setting and recording a reference correctly. Practical: certify a multi-connector link against a calculated budget.
2.2	**OTDR theory**	Rayleigh backscatter and Fresnel reflection; pulse width, range, averaging time and resolution as deliberate trade-offs; event, attenuation and receiver dead zones; reflective and non-reflective events; ghosts, gainers and negative-loss artefacts; index of refraction and distance accuracy.
2.3	**OTDR laboratory**	Launch and receive cable selection and length; acquisition on a live training span; reading the event table against the trace; bidirectional averaging for true splice loss; macro-bend identification by comparing 1310 and 1550 nm traces; saving, naming and exporting .sor files. Practical: full trace acquisition and interpretation.
2.4	**Acceptance, documentation and as-builts**	Optical return loss and reflectance; comparing measured performance to the design budget; what a defensible acceptance pack contains; how to spot a fabricated or copy-pasted contractor test report; as-built drawings, splice schedules and route records; handover checklists.
2.5	**Fault localisation and restoration**	Visual fault locator use and its limits; converting OTDR distance to a physical point using route records, slack loops and GPS; common causes — excavation, road works, vandalism, rodent damage, ONT drop breaks; emergency splice and temporary restoration; MTTR, escalation and SLA reporting. Practical: timed fault-find and restore exercise on a seeded fault.

Week 3 — FTTx, GPON and Network Operations

SESSION	TOPIC	CONTENT AND PRACTICAL WORK
3.1	**PON architecture**	GPON (ITU-T G.984) and XGS-PON (G.9807.1); OLT, ODN and ONT roles; optical splitters at 1:2 through 1:64, centralised versus cascaded splitting; class B+ and C+ budgets; wavelength plan and the 1550 nm RF video overlay; upstream burst mode, ranging and DBA in plain operational terms.
3.2	**FTTx design and deployment**	Feeder, distribution and drop segments; FDT and FAT placement and dimensioning; take-up rate and splitter ratio selection; drop cable types and installation in aerial and in-building conditions; customer premises installation, ONT siting and patching; the install defects that generate repeat truck rolls.
3.3	**Provisioning and subscriber troubleshooting**	ONT registration and provisioning walkthrough on an OLT; service profiles, VLAN and line profiles at operator level; reading ONT and OLT RX/TX power and knowing the acceptable window; interpreting LOS, LOSi, dying-gasp and high-BER alarms; distinguishing a fibre fault from a configuration fault from a customer-equipment fault. Practical: diagnose seeded subscriber complaints.
3.4	**Transport awareness and network monitoring**	CWDM and DWDM in the metro and backbone — channel plans, mux/demux, amplification and where the operator's fibre team touches them; dark fibre and IRU considerations; remote fibre test systems and optical monitoring; GIS and fibre documentation platforms; preventive maintenance programmes and route patrol.
3.5	**Safety, standards and final assessment**	Laser safety classes and eye protection; fibre-shard handling and disposal; roadside, confined-space and working-at-height precautions; the standards map (ITU-T G.652/G.657/G.984/G.9807.1, IEC 61300-3-35, TIA-568); TCRA and local authority requirements affecting fibre works. Final practical assessment and written examination.

Delivery, Assessment and Fees

Schedule Options

Both options cover the same fifteen sessions and the same assessment. The choice is about how much time the employer can release staff for. Option A is strongly recommended where the participants are operational fibre staff, because splicing and OTDR competence is built by repetition rather than by exposure.

OPTION	PATTERN	CONTACT HOURS
A — Intensive *Recommended*	Monday to Friday, 09:00–15:00 with a one-hour break. One session per day over 15 working days.	75 hours total — 25 hours per week. Approximately 45 hours of practical and laboratory work.
B — In-service	Three evenings or Saturday sessions per week — for example Tuesday, Thursday and Saturday — at two hours per weekday session and three hours on Saturday, over the same three calendar weeks.	30 hours total — 10 hours per week, with practical work concentrated into the Saturday sessions. Suits staff who cannot be released from shift.

On-site delivery at the client's own premises is available for closed corporate groups, subject to a suitable training room and a safe practical area. Kevajopa transports the laboratory equipment.

Laboratory and Equipment

Practical work is run on operator-grade equipment, with stations shared between no more than two participants:

- Core-alignment fusion splicer with precision cleaver, stripping and cleaning kit
- OTDR with launch and receive cables, plus a prepared multi-event training span
- Optical light source, power meter and visual fault locator
- Fibre inspection scope with IEC 61300-3-35 analysis
- ODF, splice closures, trays, pigtails, patch cords, splitters, FAT and FDT enclosures
- GPON demonstration rack — OLT, splitters and ONTs — for provisioning and alarm exercises

Kevajopa supplies all consumables and issues each participant with a course manual, splice log and test-record templates. Participants must bring safety boots; safety glasses, gloves and high-visibility vests are provided.

Assessment and Certification

COMPONENT	WEIGHT	FORM
Continuous practical assessment	30%	Graded splice loss, termination quality and connector inspection across Weeks 1–3
Testing and documentation portfolio	20%	Submitted loss budget, Tier 1 results and annotated OTDR trace with event interpretation
Final practical assessment	30%	Timed exercise: splice, certify and localise a seeded fault, then report it
Written examination	20%	Two hours — theory, standards, budget calculation and fault diagnosis scenarios

The Kevajopa Professional Certificate in Fibre Optic Technologies (Intermediate) is awarded on an overall mark of 60% or above, with a minimum of 50% in the final practical assessment and at least 80% attendance. Participants who attend fully but fall short receive a Certificate of Attendance and may resit the practical assessment once within three months at no additional tuition cost. For corporate intakes, a consolidated performance report per participant is issued to the sponsoring employer.

Fees and Registration

Programme Fees

ENROLMENT TYPE	FEE (TZS)	NOTES
Individual participant — Option A (Intensive)	**850,000**	Tuition, consumables, manual, assessment and certificate
Individual participant — Option B (In-service)	**620,000**	Same syllabus at reduced contact and practical hours
Corporate group — up to 8 participants	**6,200,000**	Closed intake, Option A, at Kevajopa or on the client's site
Each additional participant beyond 8	**700,000**	To a maximum class size of 12
Registration fee (per participant)	**30,000**	One-off, non-refundable, payable with the registration form

PAYMENT TERMS

- A deposit of 50% of the tuition fee, together with the registration fee, secures a place. The balance is due by the end of Week 1.
- Corporate sponsors may settle against an invoice on 14-day terms with a signed local purchase order or training authorisation attached to the registration.
- Kevajopa Technologies Limited is not registered for VAT; fees are invoiced with no VAT component. Government procuring entities deduct 2% withholding tax at source.
- Fees cover tuition, consumables, course materials, assessment and certification. They exclude participant transport, accommodation, meals and personal protective footwear.
- A place may be transferred to another employee of the same organisation at no charge up to the first day of the intake. Cancellations after that date forfeit the deposit.

How to Register

1. Complete the Registration Form accompanying this prospectus — one form per participant.
2. Attach a copy of the participant's national ID or passport, and a copy of the highest relevant academic or professional certificate.
3. For sponsored participants, attach the employer's authorisation, local purchase order or undertaking to pay.
4. Return the completed form and attachments to info@kevajopa.co.tz, by WhatsApp to +255 782 444 470, or by hand at the Kevajopa office.
5. Pay the registration fee and deposit. An invoice and payment instructions are issued on receipt of the form.
6. A confirmation letter is issued with the intake start date, timetable, venue and joining instructions.

SPEAK TO US FIRST

Corporate intakes are normally scoped in a short meeting before registration, so that the practical exercises can be matched to the equipment and topology the operator actually runs — splicer make, OTDR model, OLT platform and splitter architecture. There is no charge for that discussion.

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Kevajopa Technologies Limited, Registration No. 172177301, incorporated in Dar es Salaam on 12 February 2024 under the Companies Act, 2002. TIN 172-177-301. This prospectus is issued for information; Kevajopa reserves the right to amend the timetable, delivery venue or equipment specification where necessary, without reducing the published learning outcomes or contact hours.