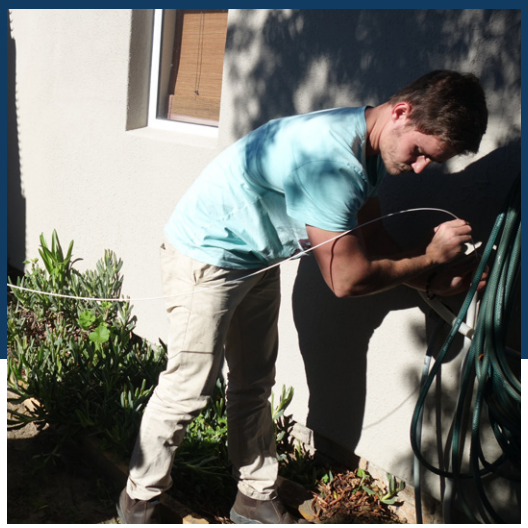
Case Study

Liquid Telecom - Rwanda Success



Location: Rwanda, Africa

Date: July 2018

Hybrid cable in duct and aerial transforming Rwandan FTTH landscape

Background

Liquid Telecom has built Africa's largest independent fiber network, which runs from the north of Uganda to Cape Town, covering Africa's fastest-growing economies, where no fixed network has ever existed before. The network currently spans over 50,000 km across borders and includes The East Africa Fiber Ring, and the first regional fiber ring on the continent and operates throughout Botswana, DRC, Kenya, Lesotho, Mauritius, Rwanda, South Africa, Uganda, Zambia, Zimbabwe and in the UK under a number of different wholesale, enterprise and retail brands.

Liquid Telecom's ground-breaking work was recognized at Capacity Magazine's Annual Telecoms Industry Awards when they were named Best African Wholesale Carrier six years in a row. They have also gained recognition at the AfricaCom Awards, SatCom Stars Awards and the Global Telecom Business awards.

Miniflex fiber cable with flexible, durable grooved jacket

Products Used

- Miniflex®
- 2-fiber cable
- 5 & 8 mm microduct
- Indoor customer termination box

Synopsis

Installing fiber to the home (FTTH) in challenging environmental conditions, while meeting tough business case targets and tight deployment timescales.

Run Lengths

25 m up to 1,600 m

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Benefits

- 5x faster deployment time
- 10x stronger fiber protection
- Removal of need for skilled technicians
- More robust, easier to handle cable
- Lower capex than traditional installations
- Completely compatible products

Liquid Telecom engineer preparing to install the PPC pre-populated aerial Dome

Scenario

Traditionally, Liquid Telecom, as well as many other FTTH operators around the world, has selected the preferred FTTH deployment methodology and designed its networks around these concepts.

Yet, due to the diverse natural environment, things are a bit different in Rwanda and Liquid Telecom has pioneered a toolbox approach to its network, by combining cable in duct FTTH with a tree and a branch aerial solution. This has allowed it to select a different network design that best overcomes the challenges in different suburbs of Kigali and the surrounding countryside on a case-by-case basis, while ensuring the integration of these designed into the overall network.

Spurring from its Pan-African backbone, the intention was to deliver up to 100Mbps connection speeds to its customers and, as with any FTTH network, the key is gaining first-to-market advance. Therefore, speed was of the essence, without having to sacrifice on quality and performance.

Furthermore, Liquid Telecom had to implement its fiber network via installers that were used to handling copper. This drove a demand for high quality components that were designed for straight forward installations, which would in turn de-skill the installation process.

FTTH Scope

This led Liquid Telecom to expand on its existing PPC Miniflex® pushable fiber optic solution and introduce one of the lightest yet most flexible aerial cables on the market, combined with a pre-populated aerial Dome, which had been tailored for the Liquid Telecom network.

Liquid Telecom delivers 4-Core to each customer and has already successfully deployed Miniflex to approximately 50,000 homes in Zimbabwe, Kenya and Zambia.

Miniflex delivers unrivalled strength and flexibility yet weighs only 8 kg (17.6 lb) per standard 1 km (3,281 ft) reel.

Due to this truly unique performance, the concept of pushable FTTH installations was pioneered by PPC and embraced by Liquid Telecom. This empowered the local contractors to increase installation efficiency by up to five times.

“Certain districts within Kigali did not support the application of cable in duct, or weigh-lead costs prohibited this design,” says Stanley Magede, CIO Liquid Rwanda. “At this point liquid Telecom turned their attention upwards and onto the existing lamp posts to design an aerial solution.”

A true hybrid blend to deliver high quality connectivity

“It was imperative to have a cable that was lightweight to avoid having to strengthen existing pole infrastructure, flexible enough to allow for tight bend radius and yet strong enough to withstand the tough environmental challenges we face here in Rwanda,” concludes Magede.

The PPC ADSS cable weighed in at only 23 kg (50.7 lb) per kilometer (3,281 ft), will span 150 m (492 ft), allowing sufficient distance for the customer drop, and has a crush resistance of more than 2,500N. The PPC ADSS cable delivers an operational x10 bend radius. These key features have again empowered the local contractors and maintained Liquid Telecom’s first-to-market advantage.

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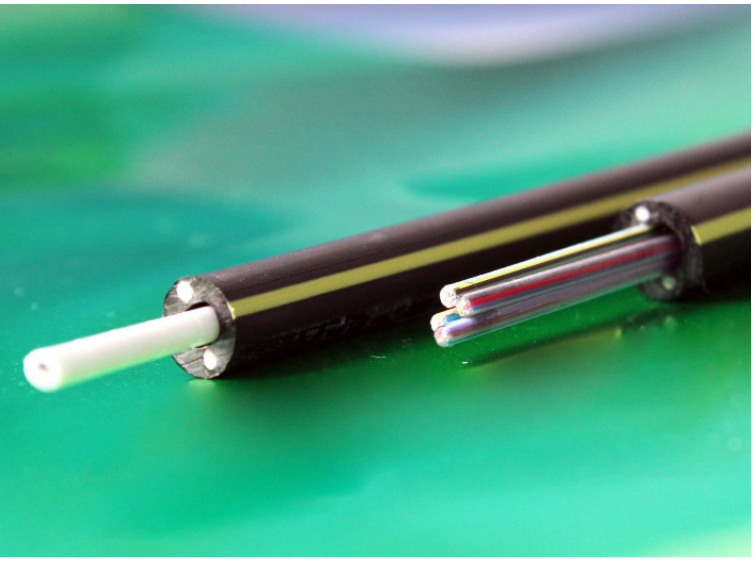

Miniflex cable being pushed through 5 & 8 mm microduct over distances greater than 150 m (492 ft)

“This was the first design that we had seen where the operator brought a tool box approach to play when faced with installation obstacles,” said Simon Roberts, PPC Sales Director for Africa and the Middle East. “Liquid Telecom has very successfully adapted to the African challenges to maintain its high return on investment model, by combining both cable in duct and aerial solutions. Liquid Telecom has one of the highest homes connected to homes passed conversation rates in the world and I feel very excited at the prospect of seeing the next chapter in their development.”

Often overlooked in aerial networks is ensuring a high quality 1P68 rated enclosure that is not only suited to the specific application but is cost effective.

Liquid Telecom came to PPC and asked them to tailor their existing aerial dome to support up to two 1:8 splitters in a pre-connectorized design. The requirement was lightweight, easy access to the join and the ability to support pre-terminated aerial cable to further reduce the installation skill set and time.

The redesigned PPC Dome weighs in at just 2.4 kg (5.3 lb) and supports the entire PPC ADSS range of cables and pre-terminated solution QuikDrop™ and can be installed by a single engineer.

“We were delighted to be involved in tailoring our aerial dome for Liquid Telecom,” notes Roberts. “We have long been known in the market for innovation in the FTTH space and pride ourselves on delivering the highest quality products. The Liquid Telecom aerial dome complements very well our continued investment in this market.”

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