



Overcoming Last-Mile Deployment Challenges with Distributed TAP

Large European Operator Minimises Cost and Disruption in a Complex Urban Environment

Background

Across EMEA, major strides have been made by operators in connecting homes and businesses with high-speed fibre broadband. These network builds initially focused on dense urban locations and, more recently, have progressed well into rural and ultra-rural areas.

Despite this momentum, as these builds mature, operators are increasingly faced with the “awkward” hard-to-connect segments of their networks. In urban areas, these more challenging segments are typically in the middle of exchanges or headend locations. Often, the surrounding areas have already been migrated to FTTH because the network was simpler to complete. Addressing these isolated copper sections can become critical to enable the copper switch-off in that exchange area.

Challenges can arise in areas without existing ducts or poles because the previous copper network was buried directly in the ground. Building new ducts is often prohibitively expensive and local authorities may oppose efforts to build new poles in urban areas.

The Requirements



Support discreet façade FTTH deployment without ducts or poles.



Lower costs and complexity through efficient install and maintenance.



Reach complex housing areas without extra injection points.



Ensure scalable, reliable delivery backed by local manufacturing.

The Challenge

For a major European cable operator looking to [overlay their copper-based network with fibre to service over one million homes in Ireland](#), this challenge spanned far beyond a small section of the build, instead representing most of their network footprint.

Their existing coaxial infrastructure was façade based, with [no existing duct and poles](#) to enable an FTTH overlay build. Completing the FTTH upgrade via traditional methods would require extensive and costly civil works, as well as major disruption for residents – not to mention potential permission challenges with local authorities.

Given the size of the coverage area, the operator also had to navigate the many layouts that can be encountered in an urban setting – including housing estates of varying sizes as well as complex cul-de-sacs and side streets. This made traditional deployment methods slow and inefficient.

The operator needed a cost-effective solution, capable of reaching deep within housing estates without requiring further network injection points that would necessitate additional duct builds.



Distributed TAP architecture is an optical distribution system where a proportion of the input power is split off from the main signal and dropped off at each terminal via a single cable.

The Solution

Because the development of the network would also be dependent on private wayleave agreements, it was imperative that the solution was discrete. This led the team towards Corning's [Evolv® Solution with Pushlok® Technology](#) – drops and terminals with unparalleled aesthetics for façade deployments.

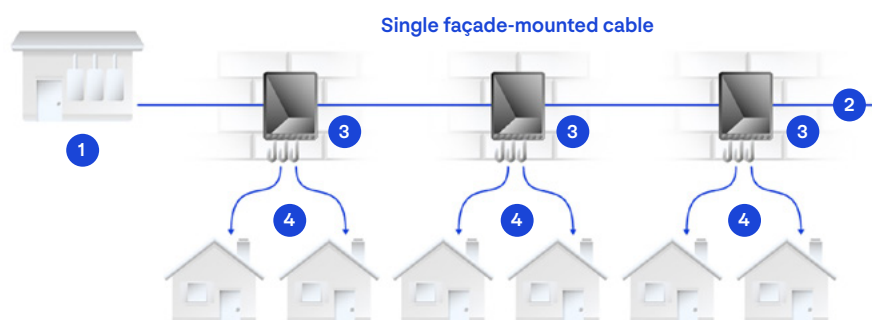
To avoid the prospect of multiple cables traversing façades, the team adopted a [distributed TAP solution](#) for the project.

However, to navigate all the way through housing estates, long-reach is critical. The solution needed to go beyond a single-fibre distributed TAP (DTAP).

To meet the operator's reach requirements, a unique [multifibre version](#) of the solution was developed. This allowed the DTAP network to reach much further on a single cable. A suite of branching and supporting terminals was also developed using the [Evolv® terminals](#) to overcome the complexity of the urban housing layout.

Multifibre DTAP Solution

- 1 Optical Line Terminal
- 2 Multifibre plug-and-play cable
- 3 Evolv Terminal with Pushlok Technology (Distributed TAP Terminal)
- 4 Pushlok local drop to homes





Corning's European research and manufacturing locations.

The Solution (continued)

To ensure [quick repairability](#) in the event of damage to the network, the solution used was [plug-and-play](#), which allows a damaged section to be repaired by simply replacing a patch cord without special equipment or splice sections – or a need to secure additional customer permissions.

Because all parts of the solution are based around [Pushlok® Technology](#), the operator could standardise the drop install between the DTAP façade-based build and their more traditional tree-and-branch-type, underground build—significantly minimising home install complexity for technicians. From the installer's perspective, the experience is the same.

The solution was also [supplied entirely from Corning's Europe-based factories](#). This local manufacturing and development capability allowed Corning to be highly agile and responsive to the operator's needs throughout the project as well as derisking the solution from supply chain issues and larger geopolitical risks.

Our Preconnectorised Evolv® Solution with Pushlok® Technology



Evolv® Multifibre Terminals

Enable long-reach distributed TAP deployments, allowing FTTH networks to extend deep into complex urban housing estates over a single façade-mounted cable, without additional injection points or civil works.



Evolv® Multifibre Pushlok® Connector

Enables plug-and-play fibre connectivity on networks that need higher fibre capacity. These connectors facilitate fast, splice-free build and repair which is critical to all FTTH builds but particularly important on DTAP deployments.



The Impact

The solution has enabled the operator to [efficiently and cost-effectively deliver their build to over one million homes](#). It overcame the prospect of major capital expenditure on civil works, with the associated public disruption and local approvals that would have slowed down the project significantly.

Beyond purely civil cost-savings, the solution achieved a very efficient unit cost through the plug-and-play nature of the build which minimised the need for skilled labour. The low fibre count also means that the splicing per home passed is very low.

While the Corning solution was developed to address the specific requirements of the operator, the multifibre distributed TAP solution provides a blueprint for tackling challenging areas without ducts and poles across EMEA.

Designed for the Toughest Last-Mile Environments

Explore how Evolv® Hardened Connectivity Solutions support discreet, scalable FTTH deployments in complex urban networks.



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