Product description

Generic Ethernet Access over Fibre to the Premises (GEA-FTTP) including FTTP on Demand (FOD)

Revisions

S/N	Version	Author	Date	Description
1	1	John Greenstreet	23 September 2009	First issue – re-issued to address PDF printing problem
	2	John Greenstreet	30 October 2009	Update
	3	John Greenstreet	18 December 2009	Update
	4	John Greenstreet	28 June 2010	Update for Pilot
	5	John Greenstreet	31 March 2011	Updates to reflect product as at R1600
	6	John Greenstreet	07 July 2011	Updates to reflect product as at R1700
	7	Dave Jones	31 October 2011	Update for EMDL
	8	Dave Jones	16 April 2012	Update for new bandwidth rates
	9	Richard Gill	27 June 2012	Update for BAU Launch
	10	Su Bowler	28 March 2012	Updated to include FTTP on Demand
	11	Dave Jones	16 April 2013	Updated for 220/20Mbps inclusion
	12	Chris Duff	03 December 2015	Updated FTTP on Demand lead times
	13	Linda Reid and Susan Smith	24 May 2016	Draft PACK changes for discussion with CPs
	14	Openreach Product Team	26 September 2016	Final version for 28 day notice period starting 30th September 2016
	15	Openreach Rebranding Program	18 August 2017	Clean rebranded version – no content changes
	16	Openreach Product Team	23 October 2017	Updated to reflect FTTP changes as at R3600 e.g. Connectorised network, new speed tiers, new ONT, Pre order ability, WLTO & NoT capabilities + Service Lines

	17	Openreach Product Team	15th November 2018	Updates provided throughout the document
	18	Openreach Product Team	28th February 2019	Addition of SLA/SLG reference – see section 9.9
	19	Openreach Product Team	21st April 2020	This is a complete document re-fresh. Whilst some of the original text has been retained, a variety of changes have been made including: • New content in most sections to explain new bandwidth variants and order options. • New network illustration diagrams and new ONT pictures. • Network architecture moved to section 2. • BBU is no longer provided for new installs (only referenced in historic deployment). • Nokia references added as a new, additional network suppler. • Extra detail on FoD order process and commercials with illustration and description. New Sections: • GEA Cablelink and OHP • Order delays requiring CP action • Migrations • Second / Subsequent Line Installs • GEA-FTTP RFS Deployment Reports • SDEDS / MIS
	20	Openreach Product Team	1st October 2020	• Transition Product withdrawn. • BBU installation withdrawn. • 1+0 Port ONT introduced. • Bandwidth options not currently supported on ECI extended. • Premium Install option added. • FTTP on Demand (FOD) Process diagram updated. • SOGEA to FTTP and MPF + FTTC to FTTP added to the list of FTTP Migrations.

				• External Line Plant Re-arrangement section added. • Expedite / Escalate amend order section added.

Introduction and handy reading tips

This is an Openreach ancillary document. It contains important information about our GEA-FTTP product (Generic Ethernet Access over Fibre to the Premises) which our CP customers ("you") will need to understand.

Its contents (unless highlighted in grey) including diagrams, tables or other illustrations (unless marked "for information purposes only") form part of our GEA contract with you, as published on the Openreach portal at:

https://www.openreach.co.uk/orpg/home/products/super-fastfibreaccess/contracts/sffacontracts.do

As we introduce or withdraw product features, or otherwise develop our services, we will make changes to this document in line with the change process for ancillary documents.

Contents

1. What is the GEA-FTTP Product (and other FTTP-based Products)?

1.1 Generic Ethernet Access over Fibre to the Premises (GEA-FTTP)

GEA-FTTP services are provided on the Fibre to the Premises (FTTP) network, with a fibre optic connection starting at the Point of Handover within the Exchange that is the "Headend Layer 2 Switch" ("Headend L2S") and carried over fibre all the way to the end customer's premises.

A GEA-FTTP service is provided as an Ethernet layer connection, configured as a single Virtual Local Area Network (VLAN) and is presented as Ethernet at both ends. Each service will receive a defined bandwidth rate (defined by the order), over which CPs can shape their own products and services at the IP layer and above.

GEA-FTTP services run over a Gigabit Passive Optical Network (GPON) architecture which splits to serve multiple end customer premises and has a total capacity of 2.4Gbps downstream and 1.2Gbps upstream bandwidth.

GEA-FTTP prices are available on the Openreach portal at:
https://www.openreach.co.uk/orpg/home/products/pricing/loadProductPrices.do?data=Po3KnmqvCqPy VFu37aLXIdpyYOJW58IELJ3a1hFsXScqDWVqEbA2PDlT5Y2OhxKv

Before CPs can order end customer GEA services, CPs must have a GEA Cablelink (CPs can choose 1Gb or 10Gb capacity Cablelinks) to the relevant Openreach Headend L2S. The GEA Cablelink carries multiple Customer VLANs (CVLANs) from our FTTP network to the CPs' network.
The GEA Cablelink Product Description is available at:
https://www.openreach.co.uk/orpg/home/products/super-fastfibreaccess/cablelink/cablelink.do

The Supplier Information Note (SIN) 506 is available at: https://www.btplc.com/SINet/

FTTP infrastructure is pre-built to selected areas and New Sites as follows:
  i.   As fibre overlay to wide areas of premises which already have copper product availability (also known as "Brownfield" premises). In a "Brownfield" area, for GEA-FTTP availability we pre-build network (except for FOD which is reactive build) to a Connectorised Block Terminal (CBT) in the street (see the Network Overview section for more details).
  ii.   Fibre only New Sites (also known as "Greenfield" addresses). These are new construction houses, flats and commercial properties where there is no existing copper network / products. For these New Sites and by agreement with the Construction Developer we go further and pre-build FTTP network all the way and into each premises on site with pre-installation of the Optical Network Termination (ONT) box in each premises.

When we have completed our network pre-build (whether that is to the CBT on the street or to the premises) we then declare the servable addresses as 'Ready for Service' (i.e. ready for end customer ordering).

1.2 FTTP on Demand (FoD)

The FoD product is enabled by the same physical FTTP GPON network architecture as the GEA-FTTP product. FoD differences from GEA-FTTP include:

- FoD is built as an overlay to GEA-FTTC areas, providing an Ultrafast upgrade path above the 80Mbps GEA-FTTC bandwidth options) and so the bandwidth options for a FoD order start above this (i.e. >100Mbps).
- The FTTP network from the Exchange to the CBT in the street is built reactively in response to the FoD provision order. This reactive network build is the essential first part of the overall L2C implementation process.
- FoD network build often starts from a fibre Aggregation Node serving the existing FTTC cabinet in the same area. Other network build elements of FoD delivery are described in more detail in the 'FTTP on Demand L2C Installation' section of this document.
- FTTP on Demand Build Charges and Exemptions are set out in the FOD section of the pricing page at: www.openreach.co.uk/FoDpricing

The GEA-FTTP and FoD products are subject to the terms and conditions found in the NGA contract at: https://www.openreach.co.uk/orpg/home/products/super-fastfibreaccess/contracts/sffacontracts.do

1.2.1 FoD Product Availability

FoD is available to order in most areas of the UK, but there are notable exceptions to availability currently, as described below.

- FoD **is available** in most GEA-FTTC enabled areas. This is where FoD provides an Ultrafast upgrade option (including products up to 1Gbps) over and above the capability of the GEA-FTTC service offering up to 80Mbps products).
- FoD **is not available** currently in the following locations:
  - Non-FTTC areas (i.e. areas with no existing NGA fibre Aggregation Node from which to pick-up fibre for the FTTP network build).
  - Exchange Only line areas (these are also non-FTTC areas).
  - To MDU / MOU premises (residential or commercial multi-tenanted premises with additional internal wiring complexity).

1.3. Fibre Voice Access (FVA)

FVA was withdrawn from new supply of service from 31st March 2020. Industry has signalled that Voice Over IP (VoIP) will be the future solution for voice services to end customers.

Existing installed FVA end customer services will continue to be supported for a period agreed by Openreach and CPs, during which we expect that CPs will migrate their end customer FVA services to their own new VoIP services. Orders for Simultaneous provision of GEA-FTTP and FVA will now be reejected.

More information on the FVA product is available at: https://www.openreach.co.uk/orpg/home/products/super-fastfibreaccess/fibrevoiceaccess/fibrevoiceaccess.do

1.4 The FTTP 'Transition Product' Commercials (Brownfield ECI areas only)

The Transition Product commercial terms were withdrawn on 30th June 2020.

1.5 Multicast

Multicast for GEA is ordered and contracted separately from GEA-FTTP. Further details and functionality of the Multicast for GEA product are defined separately within its own Product Description, which is available from the Openreach portal at:

https://www.openreach.co.uk/orpg/home/products/super-fastfibreaccess/multicast/multicast.do.

Please note that the Multicast service is incompatible with the 0.5Mbps bandwidth variant of the GEA-FTTP product.

2. FTTP Network Overview

2.1. FTTP Access Network Architecture

GEA-FTTP services are provided as Virtual Local Access Network (VLAN) services across a physical Fibre to the Premises (FTTP) network. This starts with a fibre optic connection from the Headend L2S within the Exchange Point of Handover (PoH) and runs over fibre all the way to the Optical Network Termination (ONT) box installed within the end customer's premises.

The diagram below illustrates the FTTP network arrangement at a high level, starting from the Headend L2S in the Exchange (on the left side of diagram), running over spine fibre and other fibre distribution cables, through Aggregation Nodes and Splitter Nodes (all of which are key elements of our FTTP access network architecture) and leading to the Connectorised Block Terminal (CBT) which will be in the street in close proximity to the premises it is designed to serve.

On the right hand side of the network diagram, the first FTTP L2C connection (as part of a "Brownfield" L2C order) to a premises will start from the CBT (positioned either underground in a footway box or overhead on a pole). The fibre lead-in to the end customer premises will follow an underground or overhead route as illustrated and connects to the ONT which the engineer installs inside the premises.

This is a shared network with a single fibre leaving the exchange carrying multiple services, each of which will be separated at the Splitter Node and routed on separate physical fibre through the rest of the network towards the right end customer premises. On the shared fibre section of the network each circuit is kept separate through configuration as a distinctly identifiable VLAN connection. This ensures that the VLAN is routed to the correct end customer premises ONT.
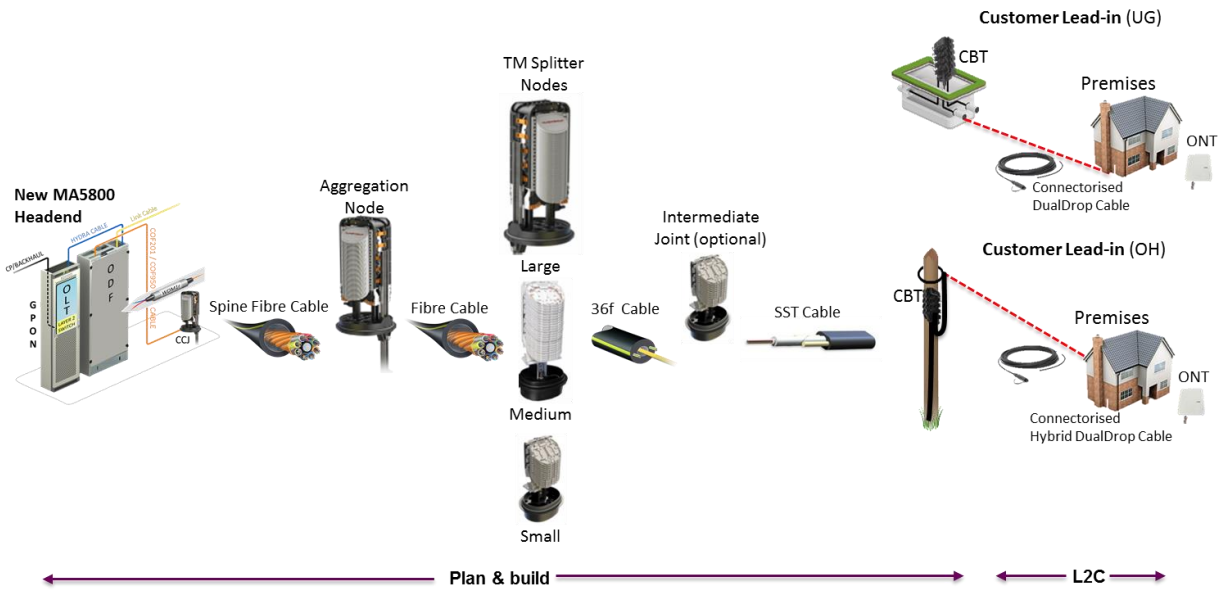
Figure 1 – FTTP Network Diagram

Note – For most installations we install a 'Customer Splice Point' (CSP), which is a fibre connecting point placed on the outside wall of the end customer premises in between the CBT in the street and the ONT in the premises. The pictures below illustrate further how this would look:

Figure 2 – Customer Splice Point Illustrations

Note – CSPs will be used in both external and internal locations and may be placed at different heights to fit with engineering work practices and to meet end customer needs. The CSP location will be close to the chosen installation point of the mains-powered ONT inside the premises and may often be close to the current copper cable entry point (where this already exists).

Openreach FTTP network build prior to 2017 used spliced fibre and Blown Fibre Tubing (BFT) for network build to Fibre Distribution Points (FDPs) in the street (FDPs perform the same function as CBTs) as a starting point for L2C fibre leads into customer premises.

2.2 In-Premises Network (ONT - Optical Network Termination and Internal Wiring)

The diagram below shows the network components near the end customer premises showing the additional internal layout of the ONT with a power supply (prior to June 2019 this would be a Battery Back-Up power pack provided by Openreach). Provision of back-up power is a CP responsibility and future deployment of this should be considered as a CP component). The power pack is plugged into a mains power socket and connected to the ONT via a cable. These components comprise the end of the GEA-FTTP network route and the ONT itself with Ethernet either 1 or 4 presentation port(s) is the end of the Openreach service (also known as the Openreach 'point of demarcation').

Figure 3 – ONT, Power Supply and Internal Wiring

From the ONT, an internal wiring Ethernet 'Cat 5e' or 'Cat 6' cable must be provided by the CP / end customer for the CP's router to connect to the ONT.

The length of internal wiring provided from the end customer premises fibre entry point to the required ONT location is up to 10m for a 'Standard' installation or up to 30m for a 'Premium' installation (*note – at time of publication, the 'Premium Install' product is being trialled*).

2.2.1 Fibre Voice Access (FVA) Premises Internal Connection (existing live services only)

FVA was withdrawn from new supply of service from 31st March 2020 and the Battery Back-up Unit (BBU) supporting FVA services was also withdrawn from new supply with new ONT installation in June 2020.

Existing FVA services are configured on a separate port on the ONT which has an Analogue Telephone Adaptor (ATA) designed to convert IP Voice signals back to analogue transmission where the end customer continues to use their existing analogue telephone.

Where previously requested by the CP, the ONT may have been connected to an existing copper-based NTE5 (Network Terminating Equipment) and the VoIP service is converted by the ATA in the ONT and then routed from the ONT via the copper NTE5 and over existing internal copper wiring to the end customer's existing analogue telephone. The NTE5 as a copper network termination component is not part of the GEA-FTTP service, but it can be used by the end customer if required to carry voice service as described above.

It remains the responsibility of the CP to agree with their end customer whether to replace existing analogue telephones with newer VoIP-based device(s) simplifying the connection from ONT to DECT and ATA-enabled CP Hub and from the CP Hub to the VoIP handset without the need for use of existing copper internal wiring.

2.3. The Optical Network Termination (ONT) and ONT Casing

The Optical Network Termination (ONT) box is the termination point for the fibre and the GEA-FTTP service delivered to the end customer's premises. The ONT will have either 1 or 4 'Data' Ethernet presentation ports and 0, 1 or 2 FVA ports enabled by ATAs. The ONT is owned by Openreach and the different ONT box types are described below. Routers or other appropriate equipment will be plugged into the designated port(s).

All ONTs are wall-mounted. The ONT is fixed firmly to the wall in order to avoid movement and potential damage to the fibre, and to allow sufficient space for ventilation. The ONT requires an external power supply (from AC mains), as it cannot be line-powered over fibre. If necessary an extension socket can be used. The ONT is designed to remain connected to the power at all times. CPs should recommend that end customers leave the ONT permanently powered-on and for this reason the ONT does not include an on/off button.

For FVA services the Analogue Telephone Adaptor (ATA) in the ONT is the end demarcation and this is the case in New Sites or any premises without existing copper network and a NTE5 copper termination. In a Brownfield premises a cable connection can be extended from the ONT's ATA to a pre-existing NTE5 copper socket (from which voice service has been provided previously over copper).

Single port ONT (used since Summer 2020)	1+1 ONT (used from 2017 until October 2020)	4+2 ONT (used up to 2017)
This ONT offers only one end customer facing Ethernet data port. It has no separate voice ports.	This ONT offers one end customer facing Ethernet data port and one ATA-enabled port for FVA-based voice.	This ONT offers four end customer facing Ethernet data ports 4 data and on Huawei ONTs only there are two ATA-enabled ports for FVA-based voice.

Table 1 – Types of Optical Network Termination (ONT) devices

We may at times need to upgrade the ONT firmware via remote download and requiring the device to be re-started leading to a short service outage for the end customer. This form of bulk firmware upgrade for multiple end customer ONTs will take place during over-night Planned Engineering Works (PEW) outage windows and Openreach will advise CPs in advance when this is planned.

The ONT technical information, is is set out in the GEA-FTTP Supplier Information Note (SIN) 506, available at: https://www.btplc.com/SINet/

Note – references to FVA services on the ONT apply only to existing live FVA services. Further FVA provision is not available as the product was withdrawn from sale on 31st March 2020.

2.3.1 Casing container for ONTs

Between December 2017 and Summer 2019 additional to the ONT installation, within New Sites premises and some Brownfield premises the ONT and BBU were housed in special casing boxes. They have not been used in Brownfield since Summer 2019. They continue to be used in New Sites premises where required and by agreement with the New Sites Construction Developers.

Figure 4 - Casing Container for ONTs (used in New Sites premises).

2.4 Point of Handover - Exchange Headend / Layer 2 Switch (and using GEA Cablelink)

2.4.1 Point of Handover

The following diagram sets out the CP network/backhaul at a specific Openreach 'Point of Handover' (Exchange):
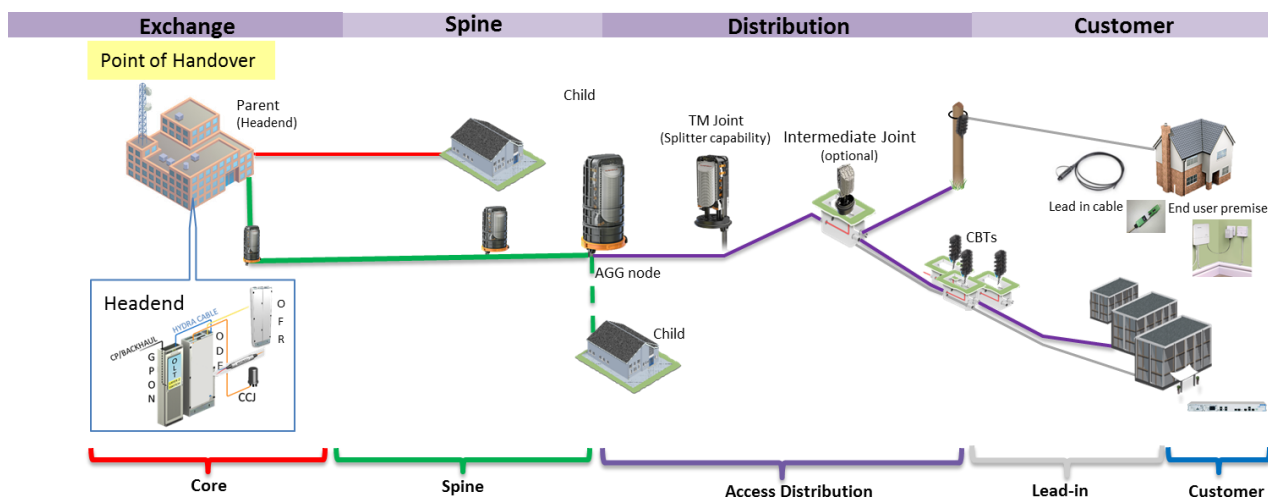
Figure 5 – Illustration of Point of Handover and FTTP Network Infrastructure

The eMLC dialogue service identifies the relevant Headend L2S which will be located within the Point of Handover serving an end customer's premises. Openreach provides reports of existing and planned GEA FTTP points of handover to CPs on the Openreach portal. CPs should contact their sales teams to gain access to the reports.

Within each Openreach GEA-FTTP PoH there will be multiple GEA-FTTP Headend L2Ss, each serving a defined area covered by the Exchange. In most PoH there will therefore be more than one L2. In order to sell GEA-FTTP services to all end customers in the area, the CP will need to have one or more GEA Cablelink connection from each L2S to equipment in the same PoH.

Ordering the GEA Cablelink and referencing this in the GEA-FTTP and FoD orders is explained further below.

2.4.2 Ordering a GEA Cablelink Connection

The GEA Cablelink product is a simple fibre connection from the Openreach Headend L2S to the CPs' network switch in the same PoH. It also has defined bandwidth capacity (1Gb or 10Gb) providing capacity to transmit end customer traffic from/to the CPs' network.

To find out more about GEA Cablelink and associated processes go to:
https://www.openreach.co.uk/orpg/home/products/super-fastfibreaccess/cablelink/cablelink.do

2.4.3 Referencing a GEA Cablelink connection within the GEA-FTTP order

When placing a GEA-FTTP order, it is mandatory to provide a GEA Cablelink (or 'OGHP Service ID') within that order. This reference is used to ensure that the GEA-FTTP service is configured with reference to the correct GEA Cablelink towards which the GEA-FTTP traffic must be routed.

The eMLC dialogue service shows the correct Layer 2 Switch ID which is required when placing the GEA-FTTP order. A CP should use the provided Layer 2 Switch ID to look up the required GEA Cablelink identifier in their own inventory to use as part of the order. Openreach will validate these details to ensure that they are correct and will not progress the order without the valid Layer 2 Switch ID.

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3. Product Features / Capabilities

3.1. Bandwidth Options

The GEA-FTTP product is available by bandwidth configuration of the following profile options. The service is configured to the specific line capability as set out in the CP order.

GEA-FTTP	Downstream peak in Mbps	Downstream prioritised in Mbps	Upstream peak in Mbps	Upstream prioritised in Mbps
0.5 / 0.5 *	0.5	0.5	0.5	0.5
40/2	40	15	2	2
40/10	40	15	10	10
40/15 ~	40	15	15	15
55/10	55	20	10	10
80/20	80	30	20	20
100/15 ~	100	20	15	15
100/30 ~	100	30	30	30
110/15 ~	110	20	15	15
115/20 *	115	55	20	20
160/30	160	110	30	30
220/20 ~	220	30	20	20
220/30 *	220	110	30	30
330/20 ~	330	40	20	20
330/30	330	40	30	30
330/50	330	110	50	50
500/165 *	500	220	165	110
550/75 *	550	110	75	50
1000/115 *	1000	110	115	50
1000/220 *	1000	330	220	110
FTTP on Demand	Downstream peak in Mbps	Downstream prioritised in Mbps	Upstream peak in Mbps	Upstream prioritised in Mbps
160/30	160	110	30	30
330/30	330	40	30	30
330/50	330	110	50	50
500/165 *	500	220	165	110
1000/220 *	1000	330	220	110

Table 2 – GEA-FTTP Product Bandwidth Variants

* - These bandwidths are not currently supported on ECI ONTs
~ - These bandwidths are withdrawn from new supply

3.2 Understanding Peak Rates and Prioritised Rates

All GEA-FTTP services are configured with four bandwidth parameters, comprising: 1. Peak Rate and 2. Prioritised Rate for both downstream and upstream traffic management. These are presented in Table 2 above and explained further below:

The Peak Rate (both downstream and upstream) sets the upper limit of the line transmission capability (between the Headend L2S and the end customer's ONT). It is important to be aware that any 'Peak Rate' data packets can be dropped in high usage periods by end customers on the same shared FTTP PON architecture (i.e. all of the end customers served from the same CBT and / or Splitter).

The Prioritised Rate (both downstream and upstream) sets a bandwidth allocation which is lower than the Peak Rate, but importantly it is categorised as traffic that should not be dropped in peak usage periods. The Prioritised Rate therefore can always be relied upon and is suitable for data packets for quality critical services such as 'Linear TV' (IPTV), Voice over IP (VoIP), Telemetry services for Alarms and other monitoring applications provided by CPs. The network is monitored and dimensioned to meet this product specification to the required performance standard as set out in Section 3.1 above.

CPs can categorise traffic as "Prioritised" using 802.1p markings as described in SIN 506 (available at https://www.btplc.com/SINet/).

In peak usage periods, where the CP has marked data packets / frames as **'Should Not Drop'** (Prioritised Rate) in the 'Customer Virtual Local Area Network' (CVLAN) then this will be delivered, whereas other frames marked as **'Can Drop'** (Peak Rate) and any unmarked frames (i.e. without 802.1p markings) are always dropped first.

3.3 Bandwidth allocation for Frame Management

Data transmission always uses a small proportion of bandwidth for traffic frame management and so the Peak Rate provided by Openreach is higher than the actual bandwidth that the CP can use to shape end customer services and the difference is the frame management bandwidth used. This is explained further in SIN 506.

3.4. L2C Installation Scope

 We operate a 'Standard Install' delivery with engineer installation activities including the following:

Upgrade to NTE5c (if required)
Up to 15m of external wiring tacked around the outside of the building prior to entry.
Connect the ONT inside the premises within 1m of NEAREST 13amp mains power socket and no more than 10m from the fibre point of entry if needed to locate a suitable mains power socket.
Connect CP router (next to the NTE or ONT for FTTP)

Connect 1 device (includes: Set-top Boxes, PCs, Laptops and Smartphones, but does not include games consoles, WiFi extenders and WiFi disks, dongles or CP specific units - devices not previously connected at the end customer premises will not be connected)
Complete the end customer checklist

Table 3a – Standard Installation Task Scope

Standard tasks as described above in Table 3a plus
More than 15m of external wiring (only where needed to reach chosen location) tacked around the outside of the building prior to entry.
Connect the ONT inside the premises within 1m of a suitable 13amp mains power socket where this is located more than 10m and up to / no more than 30m from the fibre point of entry if needed to locate a suitable mains power socket.
Enhance the in home environment – reposition end customer router
Carry out WIFI analysis (identifying best CP router location for optimal Wifi performance)
Add up to two data extension kits (Max of 2 of either data extension kits, or 1 router move and 1 data extension kit)
Connect up to 2 more devices and demonstrate (total = 3) –   *(includes: Set Top Boxes, PCs, Laptops and Smartphones, but does not include games consoles, WiFi extenders and WiFi disks, dongles or CP specific units. Any devices not previously connected at the end customer premises will not be connected)*

Table 3b – Premium Installation Task Scope

Please note the following important information for installation option chosen:

- The CP router and related CAT5e / CAT6 cable (to connect the router to the ONT) must be available at the end customer premises on the day of installation and before the Openreach engineer visits.
- If the CP router is not available, then with the end customer's agreement the engineer will complete the ONT installation without testing and proving the CP's service.
- If the CP router is not available, and the end customer refuses the completion of the GEA-FTTP or FoD installation, CPs will be charged for an Aborted Visit and will have to make another appointment.
- Any devices (tablets, laptops, etc.) not previously connected at the end customer's premises will not be connected as part of the GEA-FTTP installation.
- Once submitted, CPs cannot amend the installation element of an order.
- To find the details of the charges please see the Openreach Price List at: https://www.openreach.co.uk/orpg/home/products/pricing/loadPricing.do
- On completion of the installation, the engineer will:
  - Test the ONT and record the results
  - Connect to the CP network from the CP router using one of the end customer devices
  - Advise the end customer how to connect to the CPs' network (e.g. by providing them with a URL that you specify as part of the training of the router installation).
  - For data extensions, connection between the ONT and the end customer's router should be via CAT5e or CAT6 cables, which the CPs or the end customers would normally provide as part of the routing equipment. Voice extension cabling is not currently relevant, as the voice service will be provided separately from the ONT.

- To help CPs monitor their order workstack, we provide a daily open order raw data feed (see section 9.15 for details).

Note - We continue to review our customer experience processes, ensuring we can give you:
- Flexibility and certainty on the appointments you book and more clarity of the delivery journey and work required to complete installation;
- More communication between booking your appointments and our engineer visits.
- Jeopardy management on any failing orders.

3.5. Additional Site Visit Reasons (SVRs)

Additional SVRs can be ordered in addition to an engineer appointed provision order. These are 'Fit CP Supplied UPS' and 'Prove IP Voice'. Each SVR is designed for Openreach engineers to cover specific tasks during additional to the GEA-FTTP service provision. Both of these additional instructions are chargeable services and the prices for these are available on the Openreach Price List.

Both of these options require additional Openreach assessment of resource required to support the volume. CPs are required to provide forecasts to Sales and Relationship managers.

3.5.1 'Fit CP Supplied UPS'

This module enables an engineer to connect a CP-supplied Uninterruptable Power Supply (UPS) to both the ONT and the CP Hub / modem. The UPS is to provide a back-up power supply to both devices to ensure voice continuity for end customers in the event of a mains power failure.

It is the CP's responsibility to ensure the equipment complies with relevant safety and performance standards, and that it is delivered to the end customer premises in advance of the engineer appointment. If it is not present on the date of the appointment, the engineer will connect the ONT and CP Hub with standard power transformer plugs, and leave the service operational without the UPS. The initial GEA-FTTP order will be complete at that point. In order to subsequently connect the UPS the CP will need to book a further chargeable engineer visit.

The following is an illustration of the power connector and power specifications are needed for an Openreach ONT. This is for use when considering UPS design.

Manufacturer	Voltage (dc)	Power (w)	Connector Size and polarity
Huawei 4+2 ONT (HG8240)	11.4 - 12.6	8.5	2.1*5.5*9.5. Positive tip
Huawei 1+1 ONT (HG8110)	11.4 - 12.6	4.7	2.1*5.5*9.5. Positive tip
ECI 4+2 ONT B-FOCuS	12	16	2.1*5.5*9.5. Positive tip
Gemtek ONT used for ECI ONT replacement	12	6.5	2.1*5.5*9.5. Positive tip
Nokia ONT G-010G-Q	11.4-12.6	6	2.1*5.5*9.5. Positive tip

Table 4 – ONT power specifications and connectors

3.5.2 'Prove IPVoice'

This is available for engineer attended GEA-FTTP L2C installations and allows the engineer extra time to confirm that the CP's voice service is functioning over the GEA-FTTP data service provided. This is facilitated through the trigger of an extra KCI message to the CP, enabling the CP to configure VoIP

service and then confirm to the engineer to test the line and ensure that the voice service is functioning.

If the voice service fails to start in time, then the engineer will advise the end customer to contact the CP directly to ensure that this is resolved after the engineer has left the premises.

3.6 Service Maintenance Levels

The Service Maintenance Level (SML) on the product defines the terms of response to the fault, including identification of the cause of the fault and the timescales to repair the line and restore the CP service.

The definition and more detailed description of SMLs available for GEA-FTTP can be found under the Service Products pages of the Openreach portal at:
https://www.openreach.co.uk/orpg/home/products/serviceproducts/service_products.do

GEA-FTTP services comes with SML2 as standard. CPs can also upgrade to SML3 or SML4.

3.7. Super-fast Visit Assure

Super-fast Visit Assure (SFVA) is an additional optional service, where the CP can request an engineer-appointed visit to the end customer premises where, following a complaint from the end customer the CP has a line test which has proven that the service is working correctly and the CP wants to investigate the end customer's concerns further.

SFVA is a chargeable service and as part of a SFVA request the Openreach engineer will investigate the issue and may carry out any or all of the following procedures:

- Check ONT is powered up on arrival

- Check that ONT is working by checking that the Optical/PON LED is Green ('Sync' light on ONT is steady showing connectivity) and that the PC / Router is connected to the correct port and is functioning OK

- Check for light on the ONT and that levels are within range.

- Physical visual inspection of the in-home cabling from ONT to CSP

- Check ONT details are correct against our system records

- Connect to a high availability webpage, if made available, from your router using their PC

- Physical visual inspection of the in-home cabling from ONT to CSP

- Physical visual inspection of the home environment to understand and advise if equipment positioning could be causing poor connection quality e.g. is the router plugged into the correct LAN port

- Removal of any cables / wiring to troubleshoot connection

- Physical visual inspection of external cabling, CSP, DP and Splitter

- Swap out ONT where appropriate to support fault finding

- Liaise with the CPs' engineer on-site, if required. It's the CPs' responsibility to arrange for the engineer to arrive within the appointment slot. The CP must provide us with the engineer's contact details at the time of placing the order.

Please note that:

- Before a CP orders SFVA, the CP must have tested the service via dialogue services and received a **Line Test OK** result.

- SFVA is chargeable other than in these conditions:

  o The CP cancels prior to the Point of no Return (PONR)
  o Openreach through further diagnostic assessment determines that there is a fault on the Openreach network.

4. How to identify GEA-FTTP availability

In line with Openreach's public roll-out plan, GEA-FTTP may be purchased in areas where the FTTP network infrastructure has been deployed. The roll-out plan is updated frequently to reflect progress and availability to address level and an address fibre availability status can be determined using the enhanced Managed Line Checker (eMLC) dialogue service which is available through the Openreach portal, B2B Gateway or Web Service Gateway.

More details of progress and expansion plans can be found in the "Where and When" section of the Superfast Fibre Access Microsite on the Openreach portal at:
https://www.openreach.com/fibre-broadband/fibre-first

4.1 GEA-FTTP RFS Deployment Reports

GEA-FTTP established CPs will receive regular notification reports with details of FTTP enabled premises (Ready for Service – RFS) and the Exchange Points of Handover from which the addresses are served.

In order to receive future planned FTTP Towns and Cities deployment plans (up to 12 months in advance) established CPs will be required to sign a Non-Disclosure Agreement (NDA). In order to sign the NDA to receive this report CPs should contact their Openreach Sales and Relationship Manager.

Once an individual CP's reports are defined and are being produced regularly, they are made available for automated download from our Secure Data Exchange Distribution System (SDEDS).
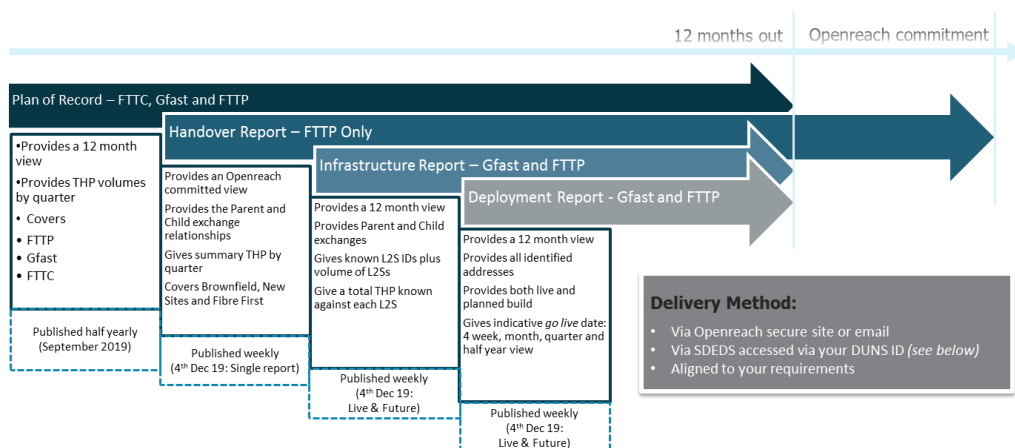
Figure 6 – Scope, frequency and CP access methods for GEA-FTTP RFS Deployment Reports

To request SDEDS access please contact: **Tec Establishment G** @ **tec.establishment@openreach.co.uk**
To request authorised access to the Infrastructure Reports on SDEDS please contact: **ORSDEDSASG G** @ orsdedsasg@bt.com

Find full details, including the columns of data available in the feed and how to establish to receive the feed and answers to other frequently asked questions in the GEA raw data feed reference guide available on our How-to guides page on the Openreach portal at:

https://www.openreach.co.uk/orpg/home/helpandsupport/how-toguides/howtoguides.do#Ultrafast guides

4.2 Using eMLC to identify Product Availability, Premises Type and L2C journey

For any UK address with a Network Address Key (NAD Key), the availability of GEA-FTTP or FoD can be seen on the eMLC pre-sales dialogue service tool (note – FTTP and FoD are mutually exclusive on availability).

eMLC also provides additional information which is relevant for understanding the complexity of the order journey for that address and the extent of Openreach network build. These flags include:

- FTTP Existing ONT Availability (to support service activation, working line takeover, migration)
- FTTP New ONT Availability (to support additional service orders if the first ONT is full and a new ONT is required)
- Premises Type, e.g.
  - Single Dwelling Unit (SDU) – i.e. A house or other single premises, not part of a multiple unit building.
  - Multi Dwelling Unit (MDU) residential / Multi Occupancy Unit (MOU) premises – i.e. this covers a wide range of types of building: blocks of flats / apartments, shopping centres, business centres or other multi-unit office or mixed-use buildings; sizes of building can also vary from two unit buildings to a building with hundreds of units.

eMLC will also show at address level whether the premises already has an ONT with spare usable ports (e.g. in New Site Greenfield premises or Brownfield premises from a previous FTTP service) or whether

there is no existing ONT and a new one needs to be installed. Examples of network status which may be shown on eMLC are:

- 'Y' – Means "yes", the GEA-FTTP product is available to the address and CPs can place an order.
- 'P' – Means "planned", the FTTP network is in a 'planned' state for the address (i.e. it is being built but is not yet complete and RFS). We will accept a pre-order for service and deliver it as soon as the network is ready.
- 'W' – Means "waiters", the address is in an area which has FTTP network infrastructure but there is no usable fibre capacity available to complete the order.
    - *Note - In this situation Openreach will only change the flag when we've built further capacity has been arranged. An order will be accepted to drive the capacity uplift, but will be delayed until the work has been completed.*
- 'N' – Means "no", the GEA-FTTP product is not available to this address. A standard GEA-FTTP provide order cannot be placed, however a reactive build order (eg: FoD) may still be possible (if FoD is shown on eMLC as being available to the end customer address).

To help CPs understand the likely work involved in a L2C order journey (engineer appointed or remote activation), eMLC also provides a Serving Network Note (SNN) relating to one of the order journey types (e.g. One Stage, Two Stage, KCI2 Assure) which is also show in the an 'ONT Install Process' field on eMLC. An example of eMLC output with this information is shown in the diagram below. More details about the L2C order journey variations in Section 5.

FTTP Availability

Premise type:	Single Dwelling Unit Residential
MDU Status:	
MDU Available date:	
MDU Progress Update:	
MDU Notes:	
FTTP CP Transfer Or WLTO Availability:	Y
FTTP Existing ONT Availability:	N
FTTP New ONT Availability:	Y
Fibre Only Area Products Availability:	N
FVA CP Transfer Availability:	N
FVA Existing ONT Availability:	Y
FVA New ONT Availability:	Y
FTTP OHP District code:	WM
FTTP OHP Exchange code:	SPA
FTTP OHP Exchange name:	STAFFORD
FTTP L2S:	BAADQB
TMANoticeOrPermitRequired:	N
TMANoticeOrPermit:	Undetermined
Serving network notes:	UG Feed with no anticipated issues
ONT Install lead time (Working days):	9
ONT Install process:	2 Stage

Figure 7 – eMLC Output (example)

All of this information helps you identify the likely work involved in a L2C order journey (engineer appointed or remote activation). The different L2C journeys driven by the network and fibre state is covered in more detail within Section 5 (Order Processes) and Section 6 (Lead Times).

If a CP is unable to progress an order and has reason to believe that FTTP infrastructure is available to an address (i.e. if neighbouring properties have availability) or if eMLC indicates that the address has no ONT where CPs believe that there has been an existing FTTP Service, then please contact the Openreach Fibre Enquiries team to clarify and resolve the query. This can be done by submitting a Formwize request as outlined within the GEA-FTTP Customer Service Plan:

https://www.openreach.co.uk/orpg/customerzone/products/customerserviceplan/super-fastfibreaccess/sffacsp.do

Please refer to the Openreach Dialogue Service - Enhanced Managed Line Characteristics User Guide published on the 'How To' section of the Openreach website below (note – the FTTP guides are in the 'Ultrafast' section towards the bottom of this page):
https://www.openreach.co.uk/orpg/home/helpandsupport/how-toguides/howtoguides.do

Additionally, for guidance on how to connect to GEA-FTTP New site locations, please refer to the Openreach 'Our Network' webpages for other useful guides, hints and tips at:
https://www.ournetwork.openreach.co.uk/default.aspx

5. Order Processes

5.1   Ordering Systems and Pre-Sales Dialogue Service Tools

Lead to Cash (L2C) provision order processes apply to all addresses and for GEA-FTTP and FoD these are placed through the EMP system. CPs can submit orders via electronic business eXtensible Markup Language (XML) transactions, or via the Openreach portal.

User guides for Openreach's web services are available via:
https://www.openreach.co.uk/orpg/home/helpandsupport/how-toguides/howtoguides.do

Progress updates on your L2C orders and T2R faults updates are delivered as 'Keeping Customers Informed' (KCI) messages generated by the EMP. This information is also available via order and fault trackers on the Openreach portal.

In order to make pre-sales checks and inform the end customer CPs will be able to use the following Dialogue Services with the GEA-FTTP product:

- enhanced Managed Line Characteristics (eMLC)
- Address Matching
- Appointing

If CPs are using the Openreach portal to place orders and faults, the relevant dialogue services are incorporated into the order journey and they don't need to run separately in advance.

If a CPs are unable to progress an order where eMLC indicates that FTTP is not available or an ONT doesn't exist and CPs believe that this is incorrect and the premises / end customer has an existing

FTTP service then please contact the Openreach Fibre Enquiries team. This can be done by raising a Formwize query as outlined in the Customer Service Plan:

https://www.openreach.co.uk/orpg/customerzone/products/customerserviceplan/super-fastfibreaccess/sffacsp.do

5.2 Pre-Sale and 'Point of Sale' activities

CPs should always ensure that end customers understand what to expect on the installation day. Initial FTTP installations usually require a little more work than copper-based broadband.

Firstly, the Optical Network Terminal (ONT) box installed in the premises requires electrical mains power in close proximity (whereas copper NTEs do not need power) and so that influences the location of the ONT and may influence the routing of the fibre as a result. The CP router will also be mains powered, so there are two boxes needing power to provide full active GEA-FTTP service and CP broadband connectivity.

Fibre is also more delicate than copper and has laser light running through it which requires a specifically trained engineer to connect. The routing of the fibre from the CBT in the street to the end customer premises is new network delivery and may require additional work at the end customer's property both outside and inside.

If the end customer isn't aware at the point of sale of the work required to install their service, there is a risk that they decide to cancel the order or be unaware that they need to be on-site to facilitate an engineer-attended appointment, which can delay the completion.

By undertaking a pre-sales conversation, CPs can make it clear to the end customer what will happen on the day of their installation and what the engineer will do in their home.

If the end customer is not the owner of their premises, please ask them to obtain their landlord's permission for work on site and any wayleaves or other access permissions required.

Additionally, in the event that the end customer is moving into a new-build home, CPs can remind them to make sure that the ONT is powered-on, tell them about the simpler service activation process onto the pre-installed ONT, how they'll know it has been successful, and what we'll do to fix it if the activation hasn't worked as expected.

Using eMLC to confirm network state, engineer attendance and anticipated work.

The eMLC dialogue service (described in Section 4.3) provides clear supplementary information about the existing fibre network and any potential need for survey or extra civils work to progress a L2C order. The Survey Network Note (SNN) and the ONT Install Process provide this additional guidance. It is important for CPs to be aware of this information and to use it to guide the end customer on the potential work and any need for end customer attendance for an engineer appointment for any parts of the installation process. All of this can also influence the lead time for appointments and order provision (as described further in Section 6).

When using the eMLC dialogue service tool, if the result shows that the address has an existing working ONT, then an engineer visit will usually not be needed for provision, transfer or working line

takeover (Second line installs are an exception and this is outlined further in the Second / Subsequent Line Ordering section of this document).

Where a usable ONT is in place, the CP must specify the ONT Reference (identified from eMLC) on the order and then the service can be provided as a data configuration activation (and without need for an engineer appointment) on the day specified in your order. This is most often the case with New Build 'Greenfield' homes.

'Brownfield' addresses (existing buildings with copper network) may have an existing ONT when a GEA-FTTP service has previously been installed into the premises. If there has been no previous GEA-FTTP installation, the first order to the address will need an engineer appointment to arrange the ONT installation. CPs can check the existing ONT status on the eMLC dialogue service before choosing their order journey.

Prior to sending the order commitment (KCI2) message, Openreach will run a remote connectivity test to ensure that the ONT is in place and that the service activation will work on the day. If those tests fail, then we will convert the order to be engineer appointed and will automatically book an appointment to fix the issues and ensure the service activation can complete successfully. We will return the appointment details in KCI2.

If we identify that the ONT is powered-off there will be no need for an engineer visit but we will send a KCI (9414) to indicate that the ONT is powered down and will need to be switched on by the customer to ensure that the service works

Further information on pre-sales checks and advice CPs may want to provide to end customers is available in a Best Practice Guide within the 'Ultrafast' portal page at: https://www.openreach.co.uk/orpg/home/helpandsupport/how-toguides/howtoguides.do#Ultrafast guides

5.3 **GEA-FTTP** Lead to Cash (L2C) Installation for GEA-FTTP (includes Standard and Premium)

Proactive Rod and Rope (work prior to L2C order placement)
- Within the Fibre Cities footprint, as part of area wide build and enablement, Openreach engineers will aim to proactively check for and remove blockages within underground ducts both in the street and underneath gardens and driveways leading to the premises.
- This will help engineers to ensure that the ducts are clear and ready for smooth fibre installation when ordered at a later date. However, sometimes the underground network may need to be cleared when the engineer attends to install a working service. The engineer won't be building any new infrastructure at the property, and the whole process of checking the ducts should take less than half an hour and this pre-work will be part of an un-appointed visit meaning that the end customer is not required to be present.
- The potential end customer will normally be advised during the build phase of this potential need to work on their property during earlier contact by Openreach.

L2C order journey types and further description of tasks are described below

L2C Order Journey Type	Appointed	Provision process description

One Stage	Y	This is engineer appointed and is expected to be a simple installation with clear path from the CBT to the end customer premises (i.e. overhead line of sight or clear duct for underground-fed fibre). The install is carried out on the agreed CCD.
Two Stage	Y	More external pre-work / civils need to bring the fibre to the curtilage or wall of end customer premises (Step 1), followed by separate appointment for installation within the property (Step 2).
KCI2 Assure	Y	An early pre-visit (non-appointed) confirms what, if any, further work is required. Openreach will attempt to complete any additional network build from our external Fibre DP to the curtilage or wall of the end customer premises. Stage 2 completes the installation within the property and this needs an appointment.
Activation	N	Configuration of ONT within the end customer premises to activate line for any of the following journeys: Greenfield New Site Provision, Brownfield Provision (where ONT previously installed), Working Line Takeover (WLTO), Migration, Notice of Transfer (NoT)

Table 5 – Types of Optical Network Termination (ONT) devices

There are six stages to a provision L2C order. These are highlighted below and will always be followed on any FTTP order submission:
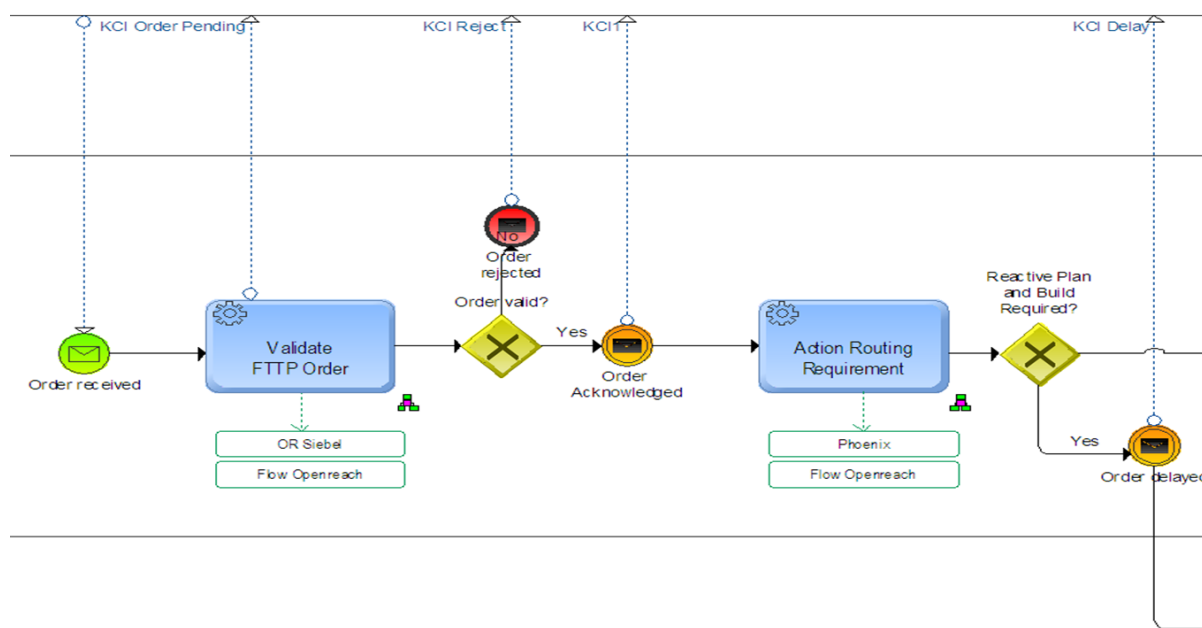
Figure 8.1 – GEA-FTTP L2C High Level Process

Make Pre-Order Enquiries	**Submit & Capture order**	**Validate Order**
• CPs **must** use the Address Matching DS to get the gold address key • CPs **must** use the Gold address key on the eMLC DS to check FTTP availability Information • If an appointment is needed then CPs **must** use the Appointing DS to book an appointment for FTTP product	• CPs **must** provide the Gold address key/ONT Reference number for placing the order • CPs **must** request if a Site visit is required by specifying Missing/Damaged /New ONT/existing • CPs can use the Appointing DS 7 days per week, including bank holidays, to make appointments (subject to appointment availability)	• Validate DUNS Id, RID, postcode, OHP Id • Perform open order validations • Validate attributes provided against the order scenario **Action Routing Requirement** • Perform capacity check • If capacity is currently not available but is planned then the Openreach system will keep the Order on hold and will progress the order once the network is available • Allocate FTTP Fibre route

Figure 8.2 – GEA-FTTP L2C High Level Process

Figure 8.3 – GEA-FTTP L2C High Level Process

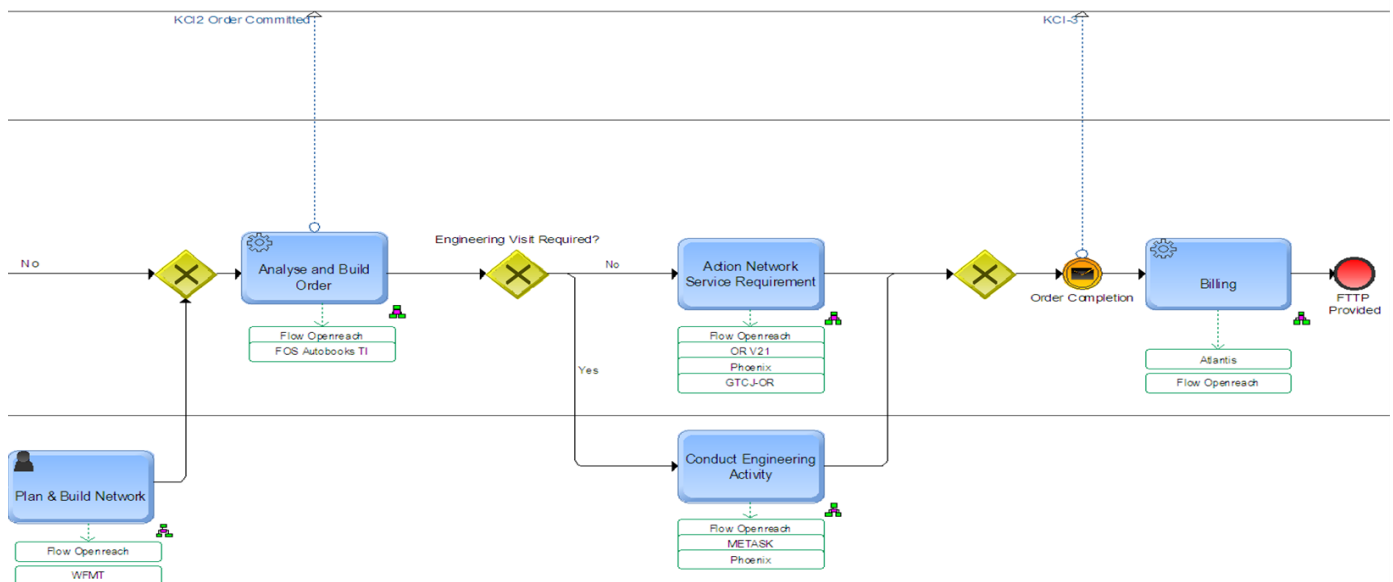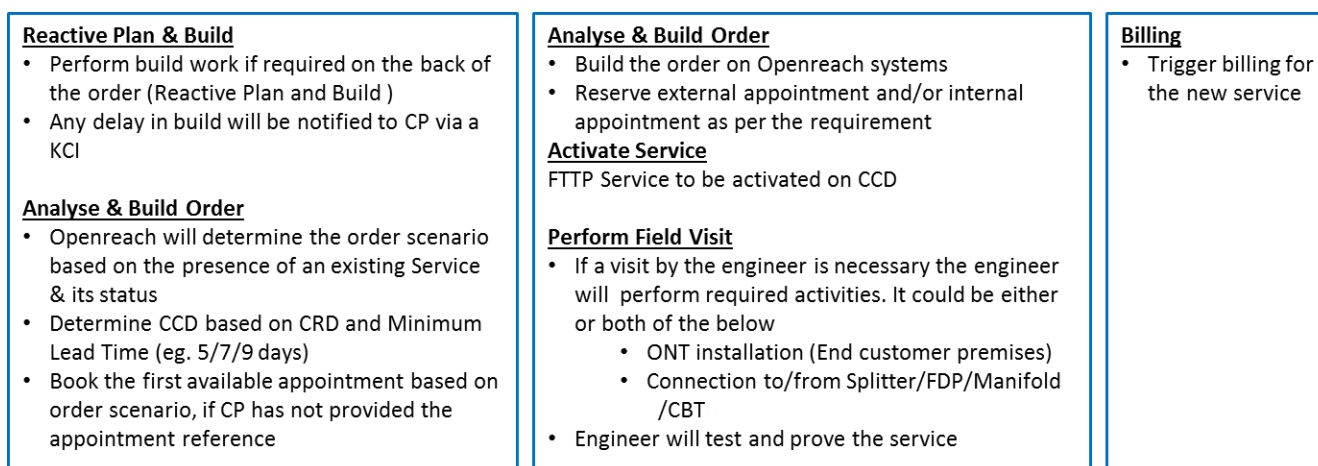| Reactive Plan & Build
• Perform build work if required on the back of the order (Reactive Plan and Build)
• Any delay in build will be notified to CP via a KCI
 	
Analyse & Build Order
• Openreach will determine the order scenario based on the presence of an existing Service & its status
• Determine CCD based on CRD and Minimum Lead Time (eg. 5/7/9 days)
• Book the first available appointment based on order scenario, if CP has not provided the appointment reference
	Analyse & Build Order
	• Build the order on Openreach systems
	• Reserve external appointment and/or internal appointment as per the requirement
	Activate Service
	FTTP Service to be activated on CCD
	
	Perform Field Visit
	• If a visit by the engineer is necessary the engineer will perform required activities. It could be either or both of the below
	   • ONT installation (End customer premises)
	   • Connection to/from Splitter/FDP/Manifold /CBT
	• Engineer will test and prove the service
		Billing
		• Trigger billing for the new service

Figure 8.4 – GEA-FTTP L2C High Level Process

Please refer to the latest GEA-FTTP Process Description for more detailed information on the stages via the Ultrafast Fibre Access section of the Openreach website:
https://www.openreach.co.uk/orpg/customerzone/products/ultrafastfibreaccess/geafttp/processdescription/fttpprocess.do The above process is available there for viewing in clearer resolution.

On appointed provision orders (where no existing ONT on site), the following activities will take place:

• Ahead of the confirmed installation date, we will check the status of the network and advise if additional work is required. We will keep CPs informed of this through KCI messages. A full list of KCI messages (Response Codes) is available in the Customer IT Zone on the Openreach portal at:
  https://www.openreach.co.uk/orpg/customerzone/ciz/emprescode/launchapplication.do

• Some premises may require Openreach engineers to work on the end customer's land to clear duct blockage or to dig and lay new duct where needed for the provision of fibre to the building. When this is needed, Openreach will agree the work and need to obtain the end customer's or landlord's permission before they proceed.

• The Openreach engineer will visit the end customer premises to fit the ONT and arrange a fibre cable connection from the CBT in the street to connect enable the ONT. As explained in the Pre-Sales Advice section, the end customer will need to present on site for the connection into their premises.

• An engineer will call the end customer on the day of the ONT installation and service activation. If the customer is all set and ready for the installation, then the engineer will proceed, otherwise, work will not commence unless the end customer confirms that they will be present at their premises to provide access when needed. If the engineer cannot contact the end customer, then abortive visit charges will apply and CPs will be asked to make a new appointment.

• The engineer will need to feed the fibre from the outside of the building inside (irrespective of whether our network is fed underground or overhead to the end customer premises) and will often need to drill a hole specifically for this. They'll then install an Optical Network Terminal (ONT) inside the building.

- If a ladder is required to access the overhead feed, the engineer will secure the ladder using a Tetra safety system (climbing harness) which will require the engineer to drill temporary holes on the outside of the end customer premises wall into which the securing rings can be fixed. The engineer will fill the holes on completion of the job.

- Included within the Standard price of the product, the engineer will agree the location of the ONT inside the end customer premises based on the location of the nearest power socket and the length of fibre tail available to optimise the FTTP service (ideally within 1m of a mains power socket and no more than 10m from the fibre entry point into the building). After providing the network fibre and connection the engineer will then power-up the ONT and run a service test on the line from the Exchange to the ONT to prove the Openreach network is working correctly.

Note – When placing an order, we trust that the end customer has the requisite authority to permit work on site and has all appropriate access arrangements or authority from the landlord of the building.   Where it is identified that further, more formal Wayleaves permission is needed to carry out work either leading or within the end customer premises, this will be requested as part of the job and may lead to further delays.

5.4 GEA-FTTP L2C Excess Construction Charges (ECC)

These charges are raised where additional infrastructure is required to provide new or extended service at an end customer's site, or at another requested location where we would otherwise not choose to extend our network based on normal commercial criteria.

When it is identified that an installation would require additional work and will need ECCs, then Openreach will inform the CP and request confirmation of acceptance of the ECCs (and this allows the CP to discuss / agree with the end customer if required) before the KCI2 order confirmation and before any installation work proceeds.

Further information on ECCs is available at:
https://www.openreach.co.uk/orpg/customerzone/products/serviceproducts/excessconstructioncharges/productdescription/excessconstructioncharges.do

The scope of chargeable work includes both external and internal work leading to the ONT and is set out in the Openreach Price List at:
https://www.openreach.co.uk/orpg/home/products/pricing/loadPricing.do

If no previous GEA installation exemption has been applied to an end customer premises, then the first £1000 of cost is exempt only for this first service installed. Subsequent service installation requiring additional fibre cable and / or civils work to provide a clear path would be subject to full ECCs.

If the end customer refuses a proposed delivery method designed to reduce or remove the need for ECCs and insists on a more expensive method of delivery, then the exemption would not apply (e.g. customer refuses overhead delivery, 'road tape' or other solution and requests a fully ducted underground delivery).

5.5 FTTP on Demand (FoD) L2C Installation

The FoD delivery process drives a reactive build of a FTTP PON network for the end customer order. FoD therefore uses exactly the same FTTP physical network components as described in Section 2.

Where a FoD differs from a GEA-FTTP order is that the FTTP network components (including the splitter and CBT) are built reactively in response to the FoD order. The FoD L2C order therefore has two parts to it in one end-to-end process:

- i. Plan and Build phase, including Exchange Headend card, Spine fibre (if needed), Splitter and connecting cable to the CBT in the street.
- ii. End customer premises installation from the CBT to the building (same as GEA-FTTP L2C order).

The FoD order process requires that the end customer accepts a defined Build Charge (similar to an ECC, but contributing to more of the cost of building the PON components (where needed) from the Exchange to the CBT. The Build Charge is explained in more detail later in this section.

More information on the FoD product and delivery processes are available on the Openreach portal at: https://www.openreach.co.uk/orpg/home/products/ultrafastfibreaccess/fttpondemand/fttpod.do

The following diagram provides a view of the high level order journey with the associated KCI messages and updates:

Order Level

KCI0 – 502 Order Pending	KCI1 – 510 Order Acknowledged	KCI2 – 520 Order Committed	KCI2 – 540 Revised e.g. ONT appt	KCI3 Order Complete
Validate Order	Survey and obtain CP build approval	Network build and End Customer installation		

Reject/Cancel

9333 Reject: invalid bandwidth values	9450 Reject: Selected product option not yet available	251 Reject: Invalid value	9739 Reject: Bandwidth incompatible with serving network infrastructure	9548 Cancel: Survey shows FOD cannot currently be provided	9458 Cancel: Proactive FTTP build authorised	1551 Amend reject: amend reason invalid	9300 Cancel: Time out CP amend not received	5114/9267 Cancel: Time out ECC amend/ OHP value not received in time	268 Amend reject: PONR passed	9267 Cancel: OHP not received in time	8012 Cancel: OHP provided is ceased	9271/9272 Cancel: OHP/Outer Tag capacity issues	9605 Amend reject: new appt date requested is before earliest available date	8004 Amend/Cancel reject: request received too late

Validation codes sent as per existing business rules – selected examples only

Delay

9558 Lead time has been extended	9560/5463 Survey or planning delayed	9847/9848 Site survey missed No access/ site hazard	5750 ECC Band requires amend (ECC approval)	9543/9416 OHP required/ Invalid OHP provided [post KCI2 and network build completion for new head end build]	9559 KCI2 delayed due to head end capacity issues	9601/9602 Addl build work/traffic management	5464 Delay due to u/ground network issues	577/578 Openreach out of time/ further work needed New appt reqd	579 Delay at End Cust premises safety hazard	5480 Openreach unable to provide the service	565/566/568 End Cust/ Openreach missed appt	572 Delay in processing KCI3

588 **ADHOC** Generic Openreach delay (with notes)
9562 **ADHOC** Delay update (with notes)
9831 **ADHOC** Generic Openreach delay closed (with notes)
9561 **ADHOC** Generic build delay (with notes)
9562 Delay update (with notes)
540 Revised KCI2 – delay closed (with notes)
9849/9850 **ADHOC** CP delay – customer details/additional information required (with notes)
9851 **ADHOC** CP delay closed (with notes)

Informational

564 Delayed in planning	9535 Your order is being processed	9592 Response required reminder [ECC/OHP & CP Delay]	9230 Response required final reminder [ECC/OHP & CP Delay]	9549 A new VLAN tag value has been provided	9557 Amended OHP value invalid – previous value will be used (with 540)	9279 Sent for network build	5197 End User missed appt detail (with 565)	9600 Openreach missed appt detail (with 566/568)

540 Order amended successfully
600 **ADHOC THROUGHOUT** information/order update e.g. survey appointment booked/missed/complete, build charge breakdown, generic notes

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5.5.1 FoD Pricing and Build Charges

FoD pricing comprises three elements:
1. The Build Charge for creating the network
2. Connection fee
3. Rental charge (recurring)

Build Charge explained: The FoD order process requires that the CP accepts a defined Build Charge (similar to an ECC, but contributing to more of the cost of building the PON components (where needed) from the Exchange to the CBT.

The Build Charge will be discounted by £700 for the PON build, plus £50 for the FoD end customer premises, which is then determined as enabled for FTTP.

Any neighbouring premises that can be served from the same CBT deployed will also be enabled for FTTP availability and declared 'RFS'. Reflecting this and to reduce the cost responsibility for the FoD customer, the Build Charge is then discounted by a further £50 for each additional premises enabled as FTTP 'RFS' by the same FoD order.

If multiple FoD orders are placed by the same CP at the same time in the same PON area (confirmed by survey), then Openreach will apply £700 discount for each FoD order received together (this is illustrated in the diagram below).
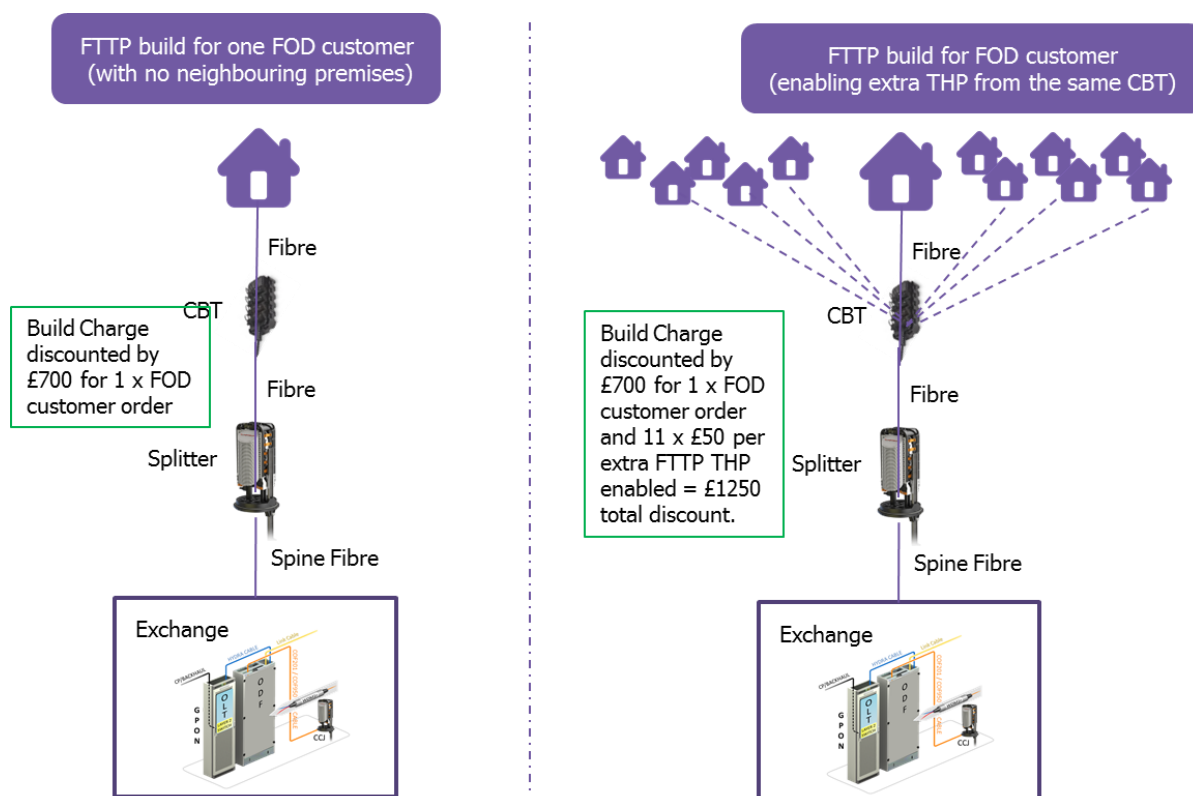

Figure 9 – FOD Build Charge Discounting (example illustration)

Full details on FoD pricing is available at: www.openreach.co.uk/FoDpricing

5.5.3 FoD indicative build charge quotation

If CPs want to have an indicative estimate of the Build Charge before placing an order, then any CP established for GEA-FTTP can request this.

In response to a request for an indicative build charge quotation, Openreach will provide a non-binding estimate of the build charge, where reasonably practicable.

The information provided by Openreach is for information only and the indicative build charge and the total homes passed (THP) by the PON build may change following a full survey.

How to do this is fully explained in the document entitled 'FTTP on Demand indicative build cost quotation request form', which can be found on the GEA-FTTP process page here: www.openreach.co.uk/orpg/customerzone/products/ultrafastfibreaccess/geafttp/processdescription/fttp process.do

5.6 Modify Orders

CPs can modify the following features of a completed and live GEA-FTTP service by placing a Modify order:

- Change of bandwidth variant (i.e. re-defining the downstream and upstream bandwidths from one profile to another)
- Change the Service Maintenance Level (default option is SML2, but SML3 and SML4 options are currently available also)
- Move / re-locate the ONT within the end customer premises (the scope of this service is described in the 'Internal ONT Shift' section later in this document).

5.7 Cease of service

CPs can submit a Cease order for GEA-FTTP. This drives Openreach to remove the VLAN service configuration between the Exchange and the ONT. The ONT box itself and any associated end customer premises wiring to the ONT should remain, where it will be ready for future re-connection when needed.

The ONT represents both the network and service demarcation points. Where a GEA-FTTP service is ceased within the minimum contract period, charges will be raised for the remainder of the term.

5.8 Pre-Order Ability (Greenfield / New Site specific process)

CPs can also submit a L2C pre-order for GEA-FTTP within 'Greenfield' (New Site) defined end customer premises, while the network build is ongoing including the Cablelink availability. The ability to do this is determined by the allocation of a 'P' (planned) flag for the address on the eMLC tool (explained in more detail below). Such orders will be accepted and held by Openreach until the build is completed and fulfilled as soon as the network is ready for service.

Pre-order is possible whether or not the Openreach Handover Port Service ID is known (i.e. where the CP's GEA Cablelink order is still in provision).

New Site Pre-Order FTTP availability is shown on eMLC as "P" (Planned) where GEA-FTTP Infrastructure is being built and essential order enabling information is known to Openreach, namely:

- Openreach network is built to the CBT and commissioned
- Full postal address has been confirmed against the plot number of the end customer premises

- Plot call-off has been confirmed by the developer (builder / construction company), which is typically the 'second fix' stage of the house build, i.e. the finishing work is in progress, such as plug socket fitting and painting of walls

For the above to be in place and the 'P' status set on eMLC, we are usually within 2-4 weeks of the ONT being installed and the property being declared Ready for Service (RFS).

Where a pre-order is placed, CPs will receive the KCI2 confirmation when the ONT installation in the new property is complete and there is a light path end-to-end from the Headend L2S in the Exchange to the ONT.

This is also the point where the FTTP availability flag in eMLC updates to 'Y'. Note, however, that eMLC requires an overnight data upload for the status change to appear, so CPs may not actually see the 'Y' marker until the day after the published ready for service date (i.e. RFS+1).

5.9 Second / Subsequent Line ordering

CPs can order additional lines into an end customer premises which already has GEA-FTTP service. The type of ONT present and the existence of spare ports determines which process to follow.

Our eMLC tool will show which type of ONT is on site: 4+2 Port (4 Data +2 FVA-based Voice); 1+1 Port (1 Data +1 FVA-based Voice); 1 Data Port ONT and in each case whether:

- There are spare ports (on the 4+2 box) to enable Second line service by configuration (no engineer appointment needed)
- There is spare fibre capacity available to enable a second ONT box provision (in the event that all existing ONT ports are in use). If spare fibre is available in the target area (at CBT, or nearby in Openreach network), then eMLC will show that a Second line (for an extra ONT install) can be ordered using this spare fibre.

Where a 4+2 ONT is installed with a spare port, then the 'Subsequent Provide' order process should be used and the service will be configured to a spare port on the existing ONT.

Where a 1+1 ONT or a 1 Data Port ONT exists and the data port is in use, if the end customer needs a second service, CPs should place the L2C order with the relevant Network Address Key (NAD key) and choose the relevant managed installation type for the ONT installation required. Other mandatory fields need to be set as:

- Change of retailer = N
- Site visit = Standard or Premium (to drive the engineer visit)

Please refer to section 5.4 for details about the full Excess Construction Charge rules that will apply when ordering a second line to an end customer premises. We recommend that you **do not attempt** install a second line as a workaround to avoid taking over or transferring an already working GEA-FTTP service.

5.10 Order Amendment and Cancellation

After placing an order, CPs can amend certain aspects of the order (e.g. Bandwidth variant and Service Maintenance Level), or cancel an in-flight order up to the Point of No Return (PONR). The PONR is 18.00 on Customer Committed Date minus 1 day (CCD-1). The only amendments CPs can make after the PONR are the CPs' contact details and the relevant hazard notes, for which CPs will have to contact the Customer Service Centre (CSC) to arrange the amendment.

Please refer to the price list for details of the prevailing amend and cancellation charges that will apply.

5.11 Migrations

A migration order can co-ordinate, through a single order instruction, the change of ownership of an existing GEA-FTTP service. We can also facilitate different combinations of GEA-FTTP provision and the existing copper service(s) cessation where specified by the CP as part of the order. The types of order that we can currently support through migration processes are:

GEA-FTTP --> GEA-FTTP
WLR --> GEA-FTTP
SMPF --> GEA-FTTP
WLR + SMPF --> GEA-FTTP
MPF --> GEA-FTTP
MPF + FTTC --> GEA-FTTP
GEA-FTTC --> GEA-FTTP
WLR + GEA-FTTC --> GEA-FTTP
SOGEA --> GEA-FTTP
WLR + Gfast --> GEA-FTTP
Gfast --> GEA-FTTP
SOGfast --> GEA-FTTP

We support this for 'CP1 to CP1' type of technology upgrade (i.e. no change of CP line ownership) as well as for 'CP1 to CP2' transfer (where the copper lines are ceased for one CP and the FTTP line is provided for a new CP).

CPs can also co-ordinate within the migration process any of the following:

- Number Port (by CP1 to another line)
- Number Transfer (changing the number ownership from CP1 to CP2)
- Parallel Running (where the existing copper line can be held active for up to 10 days)
- Enable FTTP Transfer when no change of retailer

Additional information on the development scope is available in the EIP communications (https://www.openreach.co.uk/orpg/home/updates/eipcommunications/eipcommunications.do) covering R4000, R4050 & R4250, and the EMP release documentation – see section 9 of this document.

We're planning development of further scenarios to handle SOGEA to GEA-FTTP, SOTAP to GEA-FTTP and ISDN to GEA-FTTP in future EMP releases. Please refer to future EIP comms for information on when we'll make these order journeys available.

A fault can be raised **only** by the new CP owner of the FTTP service on the CCD and completion of the order. Billing to the new CP owner also starts from CCD

5.12 Working Line Takeover (WLTO)

CPs can place a Working Line Takeover (WLTO) order on behalf of an end-customer moving into a property to take ownership of a working GEA-FTTP service previously owned by the end customer moving out of the address.

As part of this request, the existing end customer's service will be manage-ceased and a new service provided for the incoming end customer. We'll arrange all of this by data configuration using the existing ONT.

If the existing working FTTP service is owned by a different Communications Provider (CP), they can cancel, amend or control the cease date of their end customer's service if required.

5.13 Notice of Transfer

As part of a GEA-FTTP to GEA-FTTP migration or transfer, we have a supplementary option available that CPs can use to take ownership of an end customer's service without changing the existing ONT port. This enables the Gaining CP (GCP) to initiate a migration without the need for authorisation by the Losing CP.

With this supplementary option, we will notify the Losing CP (LCP) and they will have 10 working days to cancel the transfer if the end customer does not wish to go ahead.

5.14 Internal ONT Shift (Modify Order)

For existing services CPs can request an 'Internal Shift' of an ONT if the end customer wants to move it to a new location (e.g. due to the ONT causing an obstruction, or for a more appropriate service access location or purely for aesthetic reasons).

Battery Back-Up (BBU) or Universal Power Supply device connected to the ONT can be relocated with the ONT as part of this service.

To arrange this you will need to provide the following information:

> Service id
> Telephone
> Alternative Number
> Current ONT Location
> New ONT Location
> Hazard and Warnings
> Additional Notes

Note: Moving the CP router and reconnection to the ONT or moving other CP and end customer devices are not included in this capability and would be for the CP and end customer to arrange.

Advice to CPs is that an ONT Shift must conform to the following guidelines:

- The new location must also be internal within the same premises.
- The new chosen internal location must be within 1 metre from mains power sockets (sufficient to serve the ONT and the CP router).
- A maximum of 10 metres of internal cabling (can be a combination of CBT cable and internal cabling) from Openreach Customer Splice Point (CSP).
- Moving location up to 2 floors up or down from initial location (still within the limits of 10m internal wiring and up to 15m external wiring around the premises as part of the Standard Install scope).

The following points must be agreed with the end customer

- End customer must be made aware that the relocation may require additional external wiring (with the 15m limit) fixed to the outside of the premises.
- Openreach will re-use the existing ONT and CP router.
- A new cable ingress point (entry to the premises) will often be required.
- The new installation will use a Customer Splice Point (CSP) and this will be fitted to the outside wall (in most case) or an Internal CSP will be used if required.
- The end customer should be advised that any existing link from the ONT to the NTE5 and internal copper cable for voice presentation may require the copper NTE5 relocation through a separate similar WLR order. Any such work if needed is not part of the ONT Shift service.

5.14.1 External Line Plant Re-arrangement

Any need to arrange the relocation of Openreach external Line Plant (physical infrastructure outside the premises) can be arranged separately by any CP or 3rd party using the formwize registration form: https://www.openreach.com/altering-our-network-enquiry

This service applies to any type of Openreach network infrastructure. More information is available from the following page: https://www.openreach.com/network-services/altering-our-network

This is a chargeable service determined by the work required.

5.15 Provision Expedite / Escalate – Amend option

Expedite / Escalate refers to the ability to request a lead time that is shorter than the standard lead time for the ordered product. The lead time for the appointment date is calculated from the time we receive the amend request.

Expedite refers to amend requests placed with an Amend Reason (AmendReason) of **Customer Requested Amend** or **In Response To Customer Delay** (e.g. following an end customer missed appointment).

Escalate refers to amend requests placed with an Amend Reason of **In Response To BT Delay** (e.g. following an Openreach missed appointment).

Expedite and Escalate cannot be requested as part of an order at the point-of-sale and can only be arranged as an Amend order.

6. Lead times

The following content is for information purposes only. The lead times are indicative, subject to variation. All lead times are subject to commercial agreement.

GEA-FTTP Order Type Lead Times

L2C Type	Order Type	Descriptions	When is KCI2 / CCD sent	Min Lead Time
One Stage - typically Connectorised network (CBT) at MDUs or SDUs and Modify Order for Internal ONT Shift.	Provide	New line in served area. Final drop and visit to the end customer premises to fit and commission ONT in 1 visit. Note – all common areas e.g. stairs and landings are pre-fibred in the case of MDU	Immediately on order placement	5 working days but actual lead time is dependent on appointment availability. KCI2 at POS.
Two Stage - typically Brownfield Legacy network. SDUs	Provide	Two stage process; Openreach will pre build the network to the fibre DP. Step 1 (pre visit) completes network build from our external Fibre DP to curtilage or outside wall. Stage 2 completes the installation within the property	Immediately on order placement if Survey Marker is 'N'. If survey marker is 'Y' this follows KCI2 Assure process and the KCI2 will be issued AFTER a pre-visit activity, but within 5WD.	Target of 10 working days but actual lead time is dependent on whether Step 1 assessment identifies further work is required + appointment availability. KCI2 at POS. Step 1 visit completed at CCD – 7 working days. Will attempt from working day 3.
KCI2 Assure – typically additional network build is identified	Provide	Two stage process - (CBT & Legacy) Pre visit – Openreach completes the network build from our external Fibre DP to the curtilage or outside wall. Stage 2 completes the installation within the property	Subject to access to make the assessment, KCI2 will be issued AFTER a pre-visit activity, but within 5WD.	Target of 10 working days but actual lead time is dependent on whether Step 1 assessment identifies further work is required + appointment available.
Greenfield	Provide	Build complete to the end customer premises including internal equipment such as the ONT.	Immediately on order placement	1 Day automated, remote switch on, no engineering visit required – unless requested at order

				placement or Openreach changes it to a subsequent provide visit if the order fails our Generic Tests (GTC-J test)
Start previously stopped GEA-FTTP	Sub - Provide	Gives the CP the facility to place an order on the same day as order placement. This is dependent on an ONT with available ports being in place	Immediately on order placement	Same working day (where order acknowledged before 4pm) – no engineering visit unless Openreach changes it to a subsequent provide visit if the order fails our Generic Tests (GTC-J test)
Modify	Modify	Same day GEA-FTTP Modify orders to be fulfilled in near-real time on the same day (i.e. zero day lead time). Care level, product variant/option	Immediately on order placement	Same calendar – no engineering visit
Cease	Stop	No engineering visit	Immediately on order placement	3 working days
Working Line Takeover (WLTO) and **Notice of Transfer** (NoT)	Transfer of service	NoT – Change of end customer with or without a change of CP. WLTO - allows an incoming occupant to proactively 'takeover' a service that an outgoing occupier has not requested to be ceased. With or without a change of CP	Immediately on order placement	Working Line Takeover = 1 working day (driven by required dates). Notification of Transfer (NoT) = 10 working days. Change of CP only, no end customer visit required. No engineering visit – unless requested at order placement
Pre-Order (Greenfield New Site)	Provide	Allows customer to place an order before expected build completion and target Ready for Service date (and provided that eMLC shows the 'P' status to allow a Pre-order).	Sent when the ONT has been fitted and proven ready in Plan and Build activity.	2-4 weeks before planned RFS date.

Table 6 – GEA-FTTP L2C Order Journey Types and lead-times

* Engineer visits associated with provide orders can be appointed for slots between Monday and Friday (excluding regional public holidays and other dates as agreed with the appropriate NGA industry group). Customer Required by Dates (CRDs) should only be selected to meet this criterion.

Additionally, lead times may be impacted by any associated Traffic Management Act (TMA) requirements.

Please note that:

- *Where the CRD is later than the minimum lead time, it must still be requested to be a date within 90 days of order entry.*

- *All product lead times are calculated on the basis that the day the order is entered is considered day 0 and excludes weekends and bank holidays.*

Lead times for FoD

- *There is no minimum lead time for FoD as we will build the network upon receipt of an order. However, it will normally be no earlier than the 60th Working Day after the CP has accepted the build charge on the L2C order.*

- *In some instances, lead times may be long if significant build work is identified and required.*

- *CPs cannot book an appointment when placing a FOD order. Openreach will calculate the earliest completion date following the survey, which will take into account the build work required. Openreach will book the appointment and return this in KCI2. Communications Providers will need to confirm this appointment with the end customer as soon as possible, and if necessary amend the appointment. Appointments can only be amended to a later date.*

7. Fault Management (Repair / T2R and Proactive Fault Monitoring)

This section explains the diagnostic tools for identifying faults, the options for raising faults, response and fix timescales, etc…

Trouble to Repair (T2R) fault-raising processes apply to all addresses and for GEA-FTTP and FoD these are placed through the EMP system. CPs can raise faults via electronic business eXtensible Markup Language (XML) transactions, or via the Openreach portal

7.1 Service Maintenance Levels (SMLs)

FTTP employs Service Maintenance Levels for appointments as follows.

- SML 2 is provided as standard with the FTTP product.

- SMLs 3 and 4 are upgrade options which can be requested in the initial order or through subsequent placement of a Modify order to a live service.

- For SMLs 3 and 4, our engineer will make reasonable efforts to gain access to the end customer premises to resolve the fault. Where the engineer is unable to gain the necessary access, we will return the fault for a subsequent appointment.

Further information on Service Maintenance Levels are in GEA Contract Schedule 4 Service Level Agreement and the SLA/ SLG Business Rules Policy. See
https://www.openreach.co.uk/orpg/home/products/contracts/contracts.do

For full details on repair contact and escalation paths including details on the Major Service Outage (MSO) process, please refer to the Ultrafast and Superfast Fibre Access Customer Service Plan (CSP)
https://www.openreach.co.uk/orpg/customerzone/products/customerserviceplan/super-fastfibreaccess/sffacsp.do

7.2 Investigating / raising faults on a GEA-FTTP service

CPs can identify whether or not a GEA-FTTP service has a fault using the Service Test dialogue service and through this multiple parameters are captured and assessed in real-time to determine if there is an anomaly on the service. The Service Test will then return the results of the tests. An example GEA-FTTP Service Test result is shown below:

Service test

* Line test reference:	or_nga_blp10429016:934815089
Test outcome:	Pass
Test outcome code:	GTC_FTTP_SERVICE_0000
Test outcome description:	No Fault in FTTP Service
Supplementary information:	
Fault location:	OK
Appointment required:	N
Fault report advised:	N
Service level:	2
Sync status:	Up
Ethernet traffic status:	Y
Multicast service:	Enabled
Target Fix Date Time:	Not available

* Please make a note of these fields. They might be required to create fault.

Run another check

Figure 10 – GEA-FTTP Service Test Example Output

Our GEA Service Test is designed to accept connection and instability faults diagnosed as on the Openreach network. The test is designed to accept faults on the following basis:

- Where there is a loss of connection between Openreach network equipment and the ONT and the cause is located onto the Openreach network, unless identified due to disconnecting the Openreach ONT from the power supply.

- Where there is instability identified and the cause is in the Openreach network.

- Where the fibre characteristics identify that the product rate has degraded, we'll take further action to attempt to remedy the problem, for example, checking for any new physical issues.

  Loss of connection through disconnection from power supply is identified from 'dying gasp' functionality which is included as standard in the Openreach ONT.

7.2 Proactive Network Monitoring by Openreach

The Openreach NGA Operations team monitors the performance of the GEA-FTTP network 24/7/365 and proactively manages network restoration following the identification of failure.

By monitoring and managing the network in real time, we identify and clear faults at the earliest opportunity and we will advise CPs through systems notification so that they can see where we have already identified problems that have the potential to affect end customers.

Any faults raised caused by a proactively identified network failure would be linked to the proactive service restoration activity and closed in the normal way when the proactively raised fault is cleared.

Normal SLAs will apply to the faults CPs report.

CPs should not proactively test end customer's FTTP lines for faults.

8. Billing

- Pricing information is available on the Openreach website at:
  https://www.openreach.co.uk/orpg/home/products/pricing/loadPricing.do
- Contractual information is available on the Openreach website at:
  https://www.openreach.co.uk/orpg/home/products/contracts/contracts.do
- Connection charges are billed in the subsequent month from installation handover.
- Rental charges are billed monthly in advance and will include any broken period rentals from the time of installation.
- Automatic Compensation payments now apply to FTTP lines in accordance with the terms recorded in the product contract (at the same link above in this section).
- Invoices are issued monthly detailing connection and rental charges payable.
- *Note - any Openreach-initiated amendment of a previously agreed end customer premises appointment should not be charged.*

9. Supplementary information

9.1 Abortive Visit Charges

Please refer to the following document on the portal:

https://www.openreach.co.uk/orpg/customerzone/products/serviceproducts/timerelatedcharges/productdescription/productdescription.do

Abortive Visit Charges will apply. For details of charges see:

openreach

https://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=5Qtx%2F9
8jCG5vg8hL2v3UctNafpIwp0rNCh49m0U8PrMlMnGHsqdC0vzO163bJmh34D91D7M0q8u%2FIlSgtIFAKw
%3D%3D

9.2 Remote Identification

This service allows CPs to select text to be returned within the Remote ID field. It can be used to manage end customer verification. The Remote ID value can be set as one of the input values in the initial order, or can be added by placing a modify order once the service is live.

9.3 Bulk Checker facility

This allows the CP to request via email the GEA-FTTP product availability status for a large quantity of lines. Details of how to request this and options for **FTTP Bulk Checker process document** are available at

https://www.openreach.co.uk/orpg/customerzone/products/ultrafastfibreaccess/geafttp/processdescription/fttpprocess.do

The price of the Bulk Checker service is available in Section 5.13 of the Openreach price list (GEA-FTTP prices).

CPs can only use this bulk checker facility for end customers whom they are already supplying.

Note – The Bulk Checker facility is not available for the FoD product.

9.4 Service and 'special' lines at pre-built FTTP only New Sites

Service lines are non-standard lines provided at sites or multi-dwelling units (e.g. temporary, lift lines, alarm lines).

All Service Lines at FTTP New Sites are supplied via GEA-FTTP only. CPs can place orders for GEA-FTTP service lines by using a GEA-FTTP Gold Address key for the address.

Please refer to the 'Best Practice – Address Management' document published on the 'How To' section of the Openreach website at: https://www.openreach.co.uk/orpg/home/helpandsupport/how-toguides/howtoguides.do

9.5 Self-Dig Option for Duct laying

Self-dig is optional for CPs and end customers, where new duct provision for fibre service is required, to reduce the amount of ECCs applied to an order. This can be used if required for both FoD and GEA-FTTP orders.

Self-dig will be offered to end customers on the following basis:

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- Only where it is supported by their CP
- It can be conducted on private land only
- All correct wayleave and permissions will be required from the landowner
- End customers will be required to sign the self-dig agreement directly with Openreach

High level process overview as part of the L2C order journey:

- Order is received by Openreach and original KCI update to CP allows for standard ECC
- CP contacts Openreach to request the self-dig option for their end customer
- Openreach advises of revised ECC for self-dig and provides contract and information pack
- If self-dig is not suitable, the order can be progressed with standard provision and the original ECC will apply
- If self-dig is to be progressed, all correct permissions and agreements are confirmed with the CP/end customer
- The original order must then be cancelled and a new order placed cross-referencing the self-dig requirement
- Openreach confirms the reduced ECC on the new order for acceptance by the CP/end customer
- Once accepted, Openreach will then arrange for duct/boxes to be delivered to the end customer site
- End customer completes self-dig work and the CP advises Openreach to progress the order
- Openreach quality checks the self-dig work when completed and the order progresses as normal*

Where an end customer fails to complete, or complete within 6 months, then Openreach reserves the right to charge to recover (where not started) or complete (where done but not to specification) and/or remove the self-dig option

End customers will be required to sign the self-dig agreement directly with Openreach

Additional information is available in the FTTP business processes section within the customer zone area (Openreach portal account and log-in required).

9.6 ONT mismatch fault reporting

ONT Mismatches can sometimes occur, this is when the Openreach recorded ONT details do not match the actual ONT installed at the end customer premises.

CPs will be given the ability to mark a GEA-FTTP / FVA fault as an **ONT Mismatch** and to provide the correct ONT serial number. Openreach will direct the fault to a desk agent who will correct the records without the need for an engineer visit. If after correcting the ONT Serial Number there is still a fault present, the agent will progress to a field engineer, updating the fault as necessary.

CPs should complete a service test on the line, if the service test result is OK (Pass) and the Outcome Code is **GTC_FTTP_Service_1010** (ONT Port Operational Down) CPs should use the following method to submit the fault for ONT Mismatch.
Fault type (test product) - FTTP3/FVA3 (Visit Assure) test product as the service test is OK (Pass).

- The Short Description / Fault Title / Customer Problem: **ONT Mismatch.**
- Fault Details / Long Description: Additional CP notes can be provided but we request that the CP provides **CP Recorded ONT Serial Number** (from the end customer premises) and **Openreach ONT Serial Number** (from eMLC).
- CPs to book appointment of Day + 2 to ensure enough time of desk team to react on the fallouts.
- Based on the above, Openreach systems will direct to our desk agents who will amend the ONT Serial Number in the records to enable service.
- If this has resolved the issue, the agent will close the fault with a non-chargeable clear code.
- If the service appears to still not to be working once these actions are completed, the agent will update the fault and progress the fault for a field engineer visit.
-

9.7 Infrastructure Solutions

Where a drop wire, or external network needs to be moved or altered external to the end customer premises or on route in the street (e.g. from overhead-served to be underground-fed; or to re-route for a site re-development, etc …), this is part of the Network Solution services:

https://www.openreach.co.uk/orpg/home/solutions/networksolutions/networksolutions.do

Note – Infrastructure Solutions have to be ordered independently from any GEA-FTTP provision order.

9.8 Industry Recognised Security

Openreach's FTTP product portfolio meets the Impact Level 2 (IL2) network security assurance certification required by Central and Local government departments (including schools, health departments, defence, local councils, etc.)

9.9 Complaints Handling and Escalations

Please refer to the Ultrafast and Superfast Customer Service Plan, which is available at:
https://www.openreach.co.uk/orpg/customerzone/products/customerserviceplan/super-fastfibreaccess/sffacsp.do

9.10 L2C Order Tracker

GEA-FTTP L2C orders are best tracked through a portal-based tool that is currently under regular, agile development to make ongoing improvements to provide CPs with more, better information to help them monitor the order workstack. This tool is called Heads-Up Display (HUD). Please speak with the Service Manager for more information about using this tool.

We additionally supply a daily raw data feed of open order information through our Secure Data Exchange Distribution System (SDEDs), see section 9.15 for details.

9.11 Fault Tracker

Openreach has an electronic interface which enables CPs to access the notes associated with NGA orders and faults directly within their management platforms, without having to specifically log into the Openreach portal. This service is known as the Order and Fault Tracker Web Service Interface. The fair usage policy, applies when accessing the data through this Web Service Interface, but not the Openreach portal. The fair usage policy has two main parts: a reasonable usage quota, and a right to suspend service in the event of excessive over usage.

Reasonable Usage Quota for each product whose data is available through the interface, we've set a reasonable usage quota. For GEA-FTTP and FoD, the quota is the equivalent of:

- One check per order and two checks per fault.

- On a monthly basis, we will count the number of orders and faults a CP has placed with us and multiply that by the number of allowed checks per order and per fault. That is the CP's monthly reasonable usage quota for that month. We calculate the quota for faults separately from the quota for orders. The monthly quota for orders and faults is on a per product basis and we will not carry over any unused amount from one month to the next.

- If CPs exceed the reasonable usage quota, we will charge CPs for every transaction over the monthly quota. Pricing for the Order and Fault Tracker Web Service Interface can be found in section 5.4 of the Openreach price list.

- Excessive Over Usage – We reserve the right to suspend a CP's usage of the Order and Fault Tracker Sentry Web Service Interface on any day when we find that the CPs usage is so high it threatens to prevent other CPs from making a reasonable number of checks. However, we don't expect to need to do this, given the system capacity that we have available. If this happens, CPs will get a system response to say why we rejected the order or fault tracker request.

9.12 SLA/SLG policy

For information on payment of SLA/SLG Policy – Business rules overview.
https://www.openreach.co.uk/orpg/customerzone/products/serviceproducts/proactiveslgs/businessprocess/proactiveslgsprocessdescription

For Automatic Compensation service levels, refer to the Automatic Compensation Business Rules Document
https://www.openreach.co.uk/orpg/customerzone/products/serviceproducts/proactiveslgs/businessprocess/proactiveslgsprocessdescription