openreach

ISIS Practice
For Openreach and Contract Partners

AEI/ACC/N026

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One Fibre Network FTTP Strategic UG Build

About this document ...

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Content approval

This is the Issue 10 of this document.
The information contained in this document was approved on 05-May-2023 by Scott Marshall, Accreditation Professional

Version History

Version No.	Date	Author	Comments
Issue 10	05-May-2023	Quality Standards & Accreditation	Document review. Questionnaire re written.
Issue 9	04-Apr-2023	Quality Standards & Accreditation	Change of review date
Issue 9	06-Apr-2022	Quality Standards & Accreditation	Document updated to latest template. Questionnaire updated and checked from relevant reference documents.
Issue 8	06-Apr-2021	Quality Standards & Accreditation	Document format updated. Safety section updated with new bullet points. Method updated. Questionnaire rewritten/re formatted. Modular Guidance updated with new items and all scoring checked and adjusted
Issue 7	09-Apr-2020	Accreditation Standards Network Engineering	Document review. Questionnaire and modular guidance adjusted. Changes made to practical
Issue 6	10-Apr-2019	Accreditation Standards Network Engineering	Document review. Links to external sources validated/updated where appropriate. Author/Approver/Publisher details amended. Q23 removed
Issue 5	14-Feb-2019	Accreditation Standards Network Engineering	Document completely revised to reflect current practices. Links to external sources validated/updated where appropriate. Author/Approver/Publisher details amended. BT logo replaced with Openreach logo. Questionnaire completely revised and pass mark amended accordingly. Module guidance & NASA checklist revised to reflect current practices and pass mark amended accordingly.
Issue 4	24-Sep-2018	Accreditation Standards Network Engineering	Q29 re worded to avoid any ambiguity.
Issue 3	19-Sep-2018	Accreditation Standards Network Engineering	Minor change within section 7
Issue 2	03-Jul-2018	Accreditation Standards	Document review. Links to

		Network Engineering	external sources validated/updated where appropriate. Author/Approver/Publisher details amended. Questionnaire completely revised and made multiple choice. Pass mark amended accordingly.
Issue 1	28-Dec-2017	Accreditation Standards Network Engineering	Reviewed & updated by Quality and Audit Standards Manager

Table of Content

1 Introduction

This ISIS is reviewed and updated annually. Between reviews any changes are communicated using Access Engineering Communications (AEC).

Links to ISIS documents, accreditation modules and all reference material can be found in:

- Technical Library, Bookstore or Policy & Build App for Openreach.
- CANDID for Contract Partners.

Answers for all modules are available via the Author of this document (see above).

In order to comply with the requirements of this accreditation module the Assessor must follow the procedure below:

- Allow the time shown for the Delegate to complete.
- Explain that reference documentation can be used.
- The criteria for **all** sections **must** be fulfilled in order to meet the requirements for this module.

2 Scope

The target audience for this accreditation is anyone working on the Openreach network including Contract Partners.

This module is essential for anyone carrying out Fibre to the Premises (FTTP) Underground (UG) build activities, in the One Fibre Network (OFN). The overall content is covered in the following Description and Method sections, in more detail.

3 Description

This module consists of two parts, a questionnaire, and a practical assessment.

Content: It will check the Delegates understanding & ability to complete the provision of a UG FTTP network using current working practices and quality standards.

Duration: Questionnaire 45 mins **Practical:** Open

4 *Measurement*

Questionnaire: The Delegate must achieve **80%** or greater to be successful. For Openreach people the questionnaire can be found on Learning Home as an online course using the code ORCHK024.

Practical: Using the Module Guidance and ISIS documents for reference, the Assessor will check that the Delegate completes the tasks outlined in the Method section.

The Module Guidance outlines where coaching can be provided, highlighted by a Coaching Mark (**C**) next to each Assessment Pointer. No more than **30%** of the available Coaching Marks can be used.

Assessor Note: The exact score required to pass the questionnaire and the allowed number of Coaching Marks can be found in the Delegates Details section.

Post Assessment: You **must** enter the results onto the Skills Passport or Smart Awards for Contract Partners**.**

5 *Safety*

Caution: If the Delegate displays a disregard for, or lack of knowledge of safety, then STOP THE ASSESSMENT - re-assessment required - refer to –safety module for guidance

Using their mandatory holding of safety and relevant access equipment, the Delegate will demonstrate to the Assessor, the correct safety practices required to successfully complete this accreditation module. This may include a check of:

- Relevant safety modules on National Operative Passport Scheme (NOPS) card (Partners Only).
- Openreach Construction Design Management (CDM) 2015 Regulations Policy followed.
- Relevant New Roads and Street Works Act (NRSWA) qualification.
- Personal Protective Equipment (PPE).
- Equipment checks.
- Roadworks guarding.
- Gas testing procedure.
- Footway cover lifting.
- Identification of carriageway covers.
- Lifter Manhole Cover 4 (where applicable).

- Identification of associated keys.
- Method of cover removal/replacement (where applicable).
- Water test.

6 *Method*

Questionnaire: Using reference documentation where required, the Delegate will complete the questionnaire. A maximum of **45** minutes is allowed for this exercise.

Practical: Using the correct tools, equipment and working practices, the Delegate will complete the OFN build shown below in this section.

The practical assessment can be completed under live or simulated working conditions using one of the below methods:

- On site – During a new Passive Optical Network (PON) build.
- On site – During relevant sections of different PON builds
- Simulated in an approved Skill Centre or site.

The Assessor will then use the Module Guidance to verify their understanding and ability to carry out the task.

Practical Position 1:

1. Install a No Drill Bracket and Mounting bracket (Mobra.)
2. Mount a Large Termination Multifunction (TM) Joint on a Mobra.
3. Introduce a Cable Optical Fibre (COF) 600 into the Large TM Joint and loop through.
4. Install a 2 x 32 splitter.
5. Layout Element 1 of the COF600 and splice to the splitter as required.
6. Introduce a COF215 that will feed **Position 2**.
7. Layout Element 2 of the COF600 and splice to Element 1 of the COF215 feeding **Position 2.**
8. Mount an underground (U/G) Connectorised Block Terminal (CBT) onto a Pivot Arm/Mobra and introduce the tail into the large TM Joint.
9. Splice the required CBT fibres to the splitter outputs.

Practical Position 2:

1. Introduce the COF215 feeding from **Position 1** into the Small/Medium TM Joint and loop through.
2. Install a 2 x 32 splitter.

3. Layout Element 1 of the COF215 from **Position 1** and splice to the splitter as required.
4. Mount a UG CBT on a Pivot Arm/Mobra and introduce the tail into a Small/Medium TM Joint.
5. Spice the required CBT fibres to the splitter outputs.

Testing:

1. Visible light source to be used and testing carried out at correct CBT ports at both work positions.

Assessor Note: Details of how to set up the practical can be found in AEI/ACC/Z002 – A Guide to Building Simulated Accreditation.

7 *Delegate Details*

Module No	AEI/ACC/N026
Title	One Fibre Network FTTP Strategic UG Build
Date	
Delegate's Name	
Delegate's UIN	
OUC	
Assessor's Name	
Assessor's UIN	
Questionnaire	PASS/FAIL
Practical	PASS/FAIL
Notes	

Questionnaire Scoring:

Total Possible Score	Score Achieved	Required Score to Pass
21		17

Practical Scoring:

Total Coaching Marks Available	Total Coached	Total Coaching Marks Allowed
8		3

8 *Questionnaire*

No.	Question	Mark(s)
1	Passive Optical Network (PON) build for engineers is governed by what ISIS document? A. EPT/ANS/A041 B. EPT/ANS/A040 C. EPT/ANS/B040	
2	When installing a Termination Multifunction (TM) joint in a UG structure and using guidance from ISIS NWK/LNK/C573 – TM Joint Box Capacity. What must not be obstructed? A. The box steps B. The duct mouths C. The box drain	
3	What is the preferred method of supporting a Medium TM Joint in the UG network? A. Strapped to cable bearer. B. On a Mounting Bracket (MOBRA). C. No support required for this joint type.	
4	When we install new cables into a TM Series Joint the cable will be secured in a mechanical port kit. Can different types of cable be mixed in a TM Joint port kit?	

	A. Yes. B. No, only the same cable type can be used in a port kit. C. Yes, but they must be the same profile.	
5	What should be used for protection when storing looped through elements in a Large TM? A. Plastic sleeve. B. Yellow tape. C. No protection required.	
6	What is the minimum size Joint Box a Large TM Joint can be installed in? A. JF2 B. JF4 C. JF6	
7	What method is used to install a MOBRA No Drill Bracket within a modular chamber? A. Fit corner brackets. B. Expand bracket out until ring begins to flex and then loosen off half a turn. C. Strap to existing ironwork.	
8	In some cases, the UG chamber where we need to install a MOBRA No Drill Bracket may be non-standard and of narrow construction. What can we do so we can install the bracket? A. We can modify the bracket by hacksawing 40mm off the square and round section bars. B. Nothing, we need to ask for a box re-build. C. Use the new Ultra Small Flexible Bracket (item code 06743).	
9	All newly provided fibre cables must be correctly labelled using a Cable Marker Label. This is attached using 2 x Straps Cable Fixing 1A and 25mm tape in the UG network. Is a third central Straps Cable Fixing still required?	

	A. Yes on all cables with a diameter of 25mm B. No, this is no longer mandatory C. Yes, on all cables in the UG network.	
10	The spine cable will terminate at the Aggregation Node, the network will dimension down from this point. What is the preferred UG cable that should be used? A. COF250 B. COF215 C. COF201 D. COF600	
11	What is the loop-through length required in a Large TM Joint? A. 3.6m B. 2.7m C. 2.5m	
12	What is the standard BT colour code used in SST cable? A. BL, Or, Grn, Rd, Gry, Yel, Brn, Vio, Blk, W, Pk, Turq B. BL, Or, Grn, Br, Gry, Yel, Rd, Vio, Blk, W, Pk, Turq C. BL, Or, Grn, Rd, Gry, Yel, Blk, Brn, Vio, W, Pk, Turq	
13	What is the Telcordia colour code? A. BL, Or, Grn, Rd, Gry, Yel, Brn, Vio, Blk, W, Pk, Turq B. BL, Or, Grn, Brn, Gry, W, Rd, Blk, Yel, Vio, Pk, Turq C. BL, Or, Grn, Rd, Gry, Yel, Blk, Brn, Vio, W, Pk, Turq	
14	Can output fibres from two different Splitters be used to provide service to a single CBT?	

	A. Yes, as long as they go back to the same Head end. B. No, CBT's must be fed from the same Splitter.	
15	What tester is used to indicate light source passing through a fibre? A. OTDR B. Power Meter C. Live Fibre Indicator 1a	
16	When an exchange doesn't have an OTH (Optical Test Head Installed), what must be done before testing a live fibre with a dual band OTDR? A. Light source removed by the AOC. B. Call your manager. C. No testing required.	
17	What piece of equipment is used to carry out Optical loss tests? A. Live Fibre Indicator 1a. B. OTDR. C. Light Source 5c.	
18	Which two wavelengths are used to test connected fibres with an Optical Time Domain Reflectometer (OTDR)? A. 1310 and 1550nm. B. 1310 and 1490nm. C. 1350 and 1550nm.	

19	What wavelength is used to take the optical power loss reading at a CBT? A. 1310nm. B. 1550nm. C. 1490nm.	
20	What is the name of the approved fibre cleaning kit? A. Kit 798B Optical Fibre Connector Cleaning Cassette. B. Sticklers Fibre Cleaning Kit. C. Fibre Optic Connector Cleaning Stick Type Kit 799A.	
21	New working near water policies have been introduced, can you name what rules must be followed? Select all that apply A. You must not intentionally enter a body of water B. No work is allowed within 5m of fast flowing water C. All work near a body of water requires 2 trained engineers	
	Total	

9 *Modular Guidance (Practical)*

The below table should be used as a guide for the Assessor to accurately assess the Delegates knowledge and ability during the practical assessment.

Coaching Marks '**C**' are explained in the Measurement section and the total allowed can be found in Delegate Details.

If an Assessment Pointer is followed by an '**X**' then not only is no coaching allowed, but failure to meet the standard on the Assessment Pointer means that the standard has not been met for the accreditation as a whole.

Task Assessment	Assessment Pointers	Coaching	Document Guidance
Questionnaire	Completed at required % or above.	X	
Trained /Skilled	The Delegate is trained, experienced and craft competent in this skill.	X	
Safety	All safety procedures followed, and safe working practices adopted.	X	
Risk Assessment	An on-site risk assessment should be carried out.	X	
Personal Protective Equipment (PPE)	Correct PPE held, in good condition and used where necessary.	X	
Environment	Weather conditions considered before commencing work.	X	
	All rubbish and waste removed from site when the works have been completed.	X	
Equipment Available	Delegate has the correct tools, and they are in good condition to complete the task to the current work practices and quality standards.	X	
	Tools used correctly and safely.	X	
TM Joint Installation UG	Correct joint box size chosen.	X	NWK/LNK/C573
	Mobra installed correctly.	X	
	Joint mounted correctly on Mobra with all nuts/bolts present and correctly tightened.	X	
	Correct joint type provided.	X	
	Internal trays correctly used as planned.	X	
	All Port Sealing Kits fitted correctly.	X	
	All cables stripped, installed, and sealed correctly.	X	
	Joint closed and stored correctly on completion.	X	

Fibre Management in all TM Joints	Elements routed to trays on correct side.	C	
	Fibres routed and stored in trays correctly.	X	
	Elements prepared and stripped correctly at specified position.	C	
	Bend Radius not compromised on all cables.	X	
	Fibres spliced, protected, and stored correctly.	C	
	Any looped or single spare fibres stored correctly.	C	
	All fibre splicing completed where required.	X	
Installation of SASA/Splitter	Splitter input fibres routed correctly, to correct tray.	X	
	Splitter output fibres routed correctly, to correct tray	X	
	Spare output fibres stored correctly.	X	
	Fibres spliced correctly and correct protector fitted.	X	
	Splice correctly stored.	X	
	Splitter installed in correct position.	C	
Cable/Joint Support, Restraint, and Identification	All cables labelled correctly using Cable Marker Optical and correct label.	C	
	UG cables marked with yellow tape where no factory markings exist.	C	
	Cables/BFT/Sub Duct supported and restrained correctly.	X	
	Delegate understands correct methods of support and restraint.	X	
	Joint labelled with a durable indelible marker visible when the closure is fitted in the jointing chamber.	C	
CBT Installation UG	Correct CBT provided as planned.	X	
	CBT mounted correctly and in correct position (on a Mobra or flat	X	

	bar).		
	Correct amount of cable left on CBT tail for splicing.	X	
	All CBT port caps present.	X	
Fibre Testing and Cleaning	Correct tools available to carry out testing.	X	EPT/COF/D956
	Delegate has knowledge of testing parameters i.e., frequencies and optical loss.	X	
	Repair process known/followed if commission failure (optical loss outside limits) >26dB.	X	
	CBT ports cleaned before testing.	X	
	All test leads cleaned before testing (both ends).	X	
	Correct cleaning kit used.	X	AEI/AEC/B331

10 *References*

All the documents below are available through the sites and systems described in the Introduction section. If you require access to external sources within them, then please contact the Author (see above) of this accreditation module.

Assessors Note: All Openreach people should have access to the Policy & Build app via their work mobile phones. Please make sure that this app is accessed during the accreditation.

- SFY/HSH/A001 - Health & Safety Handbook (Openreach only).
- SFY/GRA/G006 – Working on, over, or near water (Openreach Only)
- CPE/NNS/V060 - Guide to Health & Safety Minimum Standards.
- SFY/HSH/C031 - Openreach Construction Design Management (CDM) 2015 Regulations Policy.
- EPT/ANS/A040 - One Fibre Network - Build Quality Manual for Engineers.
- EPT/COF/D956 - Testing practices for field Engineers commissioning and installing the Fibre to The Premises (FTTP) network.
- NWK/LNK/C573 - TM Node Joint box Capacity.
- AEI/AEC/B331 - Fibre Cleaning Process.

END OF DOCUMENT