openreach

ISIS practice
For Openreach and Contract Partners

AEI/ACC/M039

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Privacy- None

Fibre Light Loss Testing Audit/Commissioning

Module ID 1380

About this document ...

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Content approval

This is the Issue 1 of this document.
The information contained in this document was approved on 15-Jul-2021 by Scott Marshall, Accreditation Professional - Chief Engineers

Version History

Version No.	Date	Author	Comments
Issue 1	16-Jul-2021	Quality Standards & Accreditation Network Engineering	Initial issue

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 the Technical Library or Bookstore for Openreach and in 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 audit / commissioning of fibre testing in the One Fibre Network. The overall content is covered in the following Description and Method sections, in more detail.

3 Description

This module consists of a questionnaire.

Content: It will check the delegates understanding & ability to complete audit and interrogate commissioning results of fibre testing in the One Fibre Network. This will include using WOOSH, ONMSi, ORBIT and the Openreach commissioning process.

Duration: Questionnaire 90 mins

4 Measurement

Questionnaire: The Delegate must achieve **90%** or greater to be successful.

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

5 Method

Questionnaire: The Delegate must achieve **90%** or greater to be successful. For Openreach people the questionnaire can be found on Learning Home as an online course using the code ORCHK051

6 Delegate Details

Module No	AEI/ACC/M039
Module ID	1380
Title	Fibre Light Loss Testing Audit/Commissioning
Date	
Delegate's Name	
UIN/Licence No.	
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
58		52

7 Questionnaire

No.	Question	Mark(s)
1	Before connecting any tester to the FTTP (Fibre To The Premises) network what must be done every time? A. Connectors should be cleaned using the approved IPA cleaning kit B. Connectors must be wiped down with blue cloth C. Connectors should be cleaned with alcohol wipes 1A	
		1
2	What is the name of the new approved fibre cleaning kit? A. Cleaning Kit Fibre 2A B. Stickler Cleaning Kit C. SC/APC Connector Cleaning Kit	
		1
3	The Headend or the OLT is a layer 2 switch and is our handover point to the CP (Communication Provider), what does OLT stand for? A. Optical Laser Termination B. Optical Line Termination C. Optical Light Termination	
		1
4	The Headend or OLT is where we send light into the network, what wavelength does it use on the downstream? A. 1310nm B. 1350nm C. 1490nm	
		1
5	The light from the Headend passes through a WDM in the Optical Frame, what does WDM stand for? A. Waveguide Division Multiplier B. Wavelength Division Multiplexor C. Waveguide Division Multiplexor	

		1
6	The WDM gives us the ability to split the light from the Head end into different wavelengths. What wavelength does the OTH (Optical Test Head) operate on? A.1600nm B.1650nm C.1690nm	
		1
7	If a PON (Passive Optical Network) has working customers and you run a test using the OTH will this cause a short disturbance to their service? A. No, as the OTH uses an out of band wavelength B. Yes, that is why you have to be really quick C. Yes, but only on the upstream wavelength	
		1
8	Spine fibres are connected to a SASA also known as the splitter, what does SASA stand for? A. Sub Assembly Splitter Array B. Sub Array Splitter Assembly C. Splitter Array Sub Assembly	
		1
9	A passive splitter device (SASA) directs the optical path from a single path to multiple pathways without the need for any extra equipment or power. What is an accurate representation of the loss induced by a single light path being divided in two? A. -3db B. -5db C. -6db	
		1
10	The PON network has been designed to work at a maximum light level of what measured at the (Optical Network Termination) ONT? A. -24dBm B. -26dBm C. -27dBm	
		1
11	Please match the testing equipment up with its name below by paring a letter with a number, example answer A-4	

	    A B C D 1. Optical Power Meter 3C 2. Live Fibre Indicator 1B 3. Optical Light Source 5C 4. Optical Time Domain Reflectometer	
		4
12	What wavelengths do Tri-wavelength OTDR's work at? A. 1310/1490/1550nm B. 1310/1550/1625nm C. 1490/1550/1625nm	
		1
13	There are 3 basic requirements which are mandatory to be tested during the build of the FTTP Network, what are they? Select all that apply A. Continuous light from the Head end to the CBT B. Light of sufficient power to enable ONT to achieve sync C. Attenuation D. The right OGEA number has been allocated E. The CBT connected to the Head end port F. Select all	
		1
14	The test lead that is spliced on at the splitter should be a minimum of 1m for what reason? A. Due to resolution distances. If the reflector is too close to the splitter the OTH will not be able to see the splitter event. B. This will save the company money as we buy 1m leads in bulk C. All the tests will be consistent if the leads are the same length	
		1
15	When you running a test at the splitter using the OTH what 2 events should be seen? A. The splitter and the CBT port one reflector B. The splitter and the HRD 1m apart C. The HRD and the CBT port one reflector	

		1
16	What types of reflectors should you use at the splitter and the CBT? A. Optitap at both locations B. Optitap at the CBT and SC/APC green at the splitter C. SC/APC blue at the splitter and SC/APC green at the CBT	
		1
17	What is the first step taken when commissioning a CBT? A. Take power meter reading using Optical Power Meter 3C on port 1. Power level needs to be greater than <29dBm at 1490nm. B. Take power meter reading using Optical Power Meter 3C on port 1. Power level needs to be greater than <29dBm at 1550nm. C. Take power meter reading using Optical Power Meter 3C on port 1. Power level needs to be greater than <26dBm at 1490nm.	
		1
18	After all the active ports on a CBT have been tested using the OTH what is the last test to be completed? A. A baseline reference test, this allows the OTH to monitor the network and detect any new events/changes in life B. A speed test using the Optical Speed Hand Tester 4B C. A power test at 1310nm to check the upstream wavelength	
		1
19	If a customer is connected at the CBT when testing what should you do? A. Disconnect the customers to test the port as fast as you can. B. Do not disconnect the customer, test all reaming free ports at the CBT. C. Testing cannot be completed on any ports now there is a working service on the CBT and testing will cut the customers service off.	
		1
20	When commissioning at the ONT (Optical Network Termination) what is the first step to be carried out? A. Connect the Inside out cable to the ONT and run an OGEA test B. After all provision work is complete take a power meter reading at the inside out cables SC/APC connector. C. Connect the inside out cable to the ONT and connect the router, then run an OGEA test.	
		1
21	For co-located CBTs which are located within a 2m radius from one another and are served from the same SASA, what testing process should be followed? Select all that apply A. Test when leaving reflector in is only required at one of the CBT's B. A reflector should be left in port one of each CBT C. No reflector is to be left in any CBT as the system can't tell them apart	
		2
22	Please select the correct statement.	

	A. You need to plug in a reflector at the ONT before you run a baseline reference test. B. You need to attach a reflector onto the inside out cable before you run a baseline reference test. C. You need to connect the inside out cable to the ONT before you run a baseline reference test.	
		1
23	Why is it so important to use Auto Toggle in conjunction with the OTH? Please select all that apply. A. There is no need to use Auto-Toggle as OTH provides the same capability. B. Auto Toggle is a better test that OTH C. Auto Toggle proves light connectivity, while the OTH proves light quality D. It proves that the network being tested is connected to the correct port on the headend.	
		2
24	What 3 options do you have when running an Auto Toggle Test? A. Toggle fibre light on B. Toggle fibre light off C. Toggle fibre tone on D. Toggle fibre tone off E. Toggle fibre light status	
		3
25	What mandatory information is required to run an Auto Toggle test? A. Device ID, phone number, Head end port, CBT ID B. Device ID, Head end ID, Head end Slot, Head end Port C. Device ID, CBT ID, Head end ID, Head end Port	
		1
26	Openreach have introduced a new Headend vendor called ADTRAN, what is different about the new Headend ID? A. Nothing, it's the same as the other vendors B. The Headend ID is made up of all numbers C. The Headend ID contains additional characters	
		1
27	After each Toggle transaction the user will be presented with what? A. A time stamp that must be recorded on CANDID B. A call number as a reference which will be recorded on TADDS C. A toggle test result, ok or not ok. This will be recorded on TADDS	
		1
28	In Auto Toggle what is the Auto Timer function? A. Toggles the Headend port back to its default status after a fixed amount of time, ensuring the port is in the correct status for the Headend B. Moves the port into alarm mode and starts sending an alarm tone down the fibre C. Toggles the Headend port back to factory settings after 120mins	
		1
29	Auto Toggle is a great way to prove you are on the correct routing back to the Head end.	

	When is the system not available to be used? A. At peak traffic times 8.00am to 10.00am - 5.00pm to 10.00pm B. After the PON has the first customer connected C. After the first CBT has been connected	
		1
30	Please select a statement that best describes a No Light fault. A. The customer address key (NAD key) is attached to CBT and/or Splitter that has been spliced to the wrong Headend port B. The customers address key (NAD key) is attached to a CBT port that is not able to get light from the Headend switch, due to no end to end light path. C. The customers address key (NAD key) has not been authenticated to the correct Headend port	
		1
31	Chief Engineers have developed a Fall-Back Testing process which needs permission from the Chief Engineer Policy Team before it can be used. At what stage of the build can this method be adopted? A. This process can only be used on PON's with no working customers on it B. At all stages of the build as long as the CE team have agreed you can use it C. This process can only be used up to the splitter, it doesn't work on CBT's	
		1

32	What address is used to access the ONMSI Desktop System?
	
	A. Https;//onmsi-test.desktop/dyndns.biz
	B. Https://onmsi-server.dyndns.biz
	C. Https;//onmsi-otdr/test/server.dyndns.biz	

		1
33	The variance of dB insertion loss should be no more than what between ports when testing a CBT? A. 0.2dB B. 0.3dB C. 0.4dB	
		1
34	The variance of distance should be no more than what between ports when testing a CBT? A. 0.5m B. 1m C. 1.5m	
		1
35	During the network build from the Headend through to CBTs, issues with some or all of the network means that the normal sequential build cannot be followed. What process must be followed A. A reflector should be left at the splitter so when testing starts it can be referenced B. No reflectors are to be left in until testing has been completed C. All CBT's should have a reflector left in so they can be seen when testing starts	
		1

36	The 'Measurements' field on the ONMSi web application, is the measure for what? A. Actual height of the peak B. The distance to the peak C. The loss of the peak	
		1
37	The 'Origin' peak on the ONMSi field test app is the measure of what? A. The distance between the Headend and the reflector B. The absolute power reading C. The actual power lost between the Headend and the reflector	
		1
38	The 'Power' result seen on the field power meters is the measure of what? A. The loss between the Headend and the test point B. Actual power being seen at the point of test C. The actual distance the light will travel at the recorded power level at the test point	
		1
39	When looking at a trace of a completed splitter on the ONMSi system what peak will be the highest? A. The Splitter B. The CBT reflector C. The customers ONT	
		1
40	Ghost Peaks are caused by what? A. Physical intervention in the network causes them B. It's a known fault with Nokia Headends that means you see double peaks on the trace. C. It is the light from the Physical reflection, being re-directed backwards past the original (Physical) reflection.	
		1
41	Please select the true statement. A. The Ghost peak will be the exact same distance past the Physical reflection as the Physical reflection is to whatever is causing the Ghost peak B. The Ghost peak will be a greater distance past the Physical reflection as the Physical reflection is to whatever is causing the Ghost peak C. The Ghost peak can vary in distance past the Physical reflection as the Physical reflection is to whatever is causing the Ghost peak	
		1
42	If the SASA distance has been recorded incorrectly and is set at a distance longer than that of the CBT you are testing, what will be the result of the test? A. No reference peak detected B. New peak detected C. No peak detected	
		1
43	If a CBT has incorrectly been assigned a reference peak and is preventing further testing	

	what can you do? A. Log into the ONMSi Trace system and edit your results B. Delete the splitter results and re test all ports on all CBT's C. Visit the site and re test the CBT all ports	
		1
44	You will not see any peaks on the test app when the status is set to what? A. Home B. Not Home C. Not referenced	
		1
45	A peak before the splitter is likely to be caused by what? A. The trace going through the WDM cassette B. A faulty trace, the OTH may need to be calibrated C. A faulty splice or Macro bend	
		1
46	All Auto Toggle test results are stored on TADDS for what period of time? A. 3 months B. 6 months C. 12 months	
		1
47	All of the associated Auto Toggle Data & Light loss data is available in the ORBIT Auto Toggle Testing Dashboard, the data is stored for what period of time? A. 1 year B. 18 months C. 2 years	
		1
48	Auto Toggle results are stored on TADDS, what other results can be found in this system A. Light Loss Readings B. OTDR trace results C. OGEA speed results	
		1
49	What systems are used to perform an Auto Toggle test Select all that apply A. Fast Test 2 B. CSS C. CANDID D. My Jobs E. TADDS F. ORBIT	
		3

8 *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.

- EPT/ANS/A040 - One Fibre Network – Build Quality Manual for Engineers.
- EPT/COF/C008 - Testing practices for PTO engineers testing in the Fibre to the Premises (FTTP) network
- EPT/COF/D901 - Optical Consolidation Rack (OCR)
- EPT/COF/D956 - Field Engineer testing practices for the Fibre To The Premises (FTTP) network
- EPT/COF/D983 - Auto Toggle Practices & Procedures
- NWK/LNK/C569 - Process of quality FTTP network build in Fibre Cities (Build Stage)

END OF DOCUMENT