RECOMMENDED INSTALLATION DOCUMENTATION PRACTICES

INTRODUCTION

Documentation of complex cabling systems is a fundamental quality assurance requirement which has important implications for the long term operation of the cabling systems. As such the "documentation package" should form a clearly defined deliverable item within an installation contract and should be subject to agreement between the installer and the user of the cabling system.

The United Kingdom Fibreoptic Industry Association is committed to supporting the highest standards of product and service provision both to and from its members. The standardisation of the "documentation package" and the associated clarification of the installer-user interface is an important aspect of this commitment. The FIA has defined minimum documentation requirements which it is believed are necessary to provide a complete definition of the installed base. This document details two approaches to the provision of this level of documentation, schematic and textual, which may be used interchangeably by those specifying, installing, maintaining or operating fibre optic cabling infrastructures. The table below details the documents which form the two approaches.

	Schematic	Textual
Inter-Nodal	Site Plan	Site Plan
	Site Schematic	Nodal Register
	Site Schematic	Route Register
	Site Schematic	Cable Register
	Site Schematic	Nodal Connectivity Register
	Site Schematic	Route Contents Register
Intra-Nodal	Nodal Schematic	Conduit and Conduit Contents Register
	Nodal Schematic	Closure Register
	Nodal Schematic	Nodal Contents Register
	Closure Schematic	Local Closure Connectivity Record
	Closure Schematic	Remote Closure Connectivity Record
Test	Closure Test Register	Closure Test Register

The choice of documents provided for a particular installation should be defined within the Specification Agreement developed by the specifier of the infrastructure (and, where appropriate, subsequently amended within the Quality Plan). The terms Specification Agreement and Quality Plan used here are as defined within BS7718; A Code of Practice for the Installation of Fibre Optic Cabling.

GLOSSARY OF TERMS

Access Port ID — The unambiguous identification of the port at which access may be gained to the other end of a specified optical fibre. This may or may not lie within an *adjacent closure*.

Adaptor Type — Information relating to the type of adaptor used in the *termination* of a specified optical fibre. If a device is identified (e.g. ST) then it is assumed that the optical fibre is terminated on the face of the specified *closure*. If "NONE" is used then it is assumed that the termination passes through the face of the *closure*.

Adjacent Node — A *node* to which the *node* of interest is directly connected. This may not be the *node* at which the interconnecting *cable* is directly accessible which is termed the *remote access point*.

Cable — A fibre optic cable used within the installation.

Cable Length — The length of a specified *cable*.

Cable ID — An unambiguous identification code of a *cable*.

Cable Type — Information relating to the purpose or design of a *cable*.

Closure — A device, mechanism or fitting used to house optical fibres within a *node* which enables their termination or jointing in a protected environment.

Closure ID — An unambiguous identification code of a *closure*.

Closure Position — The installed location of a specified *closure* within a specified *node*.

Closure Type — Information relating to the purpose or design of a *closure*.

Conduit — A device or mechanism by which optical fibres are routed between *closures* within a *node*.

Conduit Contents — The optical fibres contained within a specific *conduit*.

Conduit ID — An unambiguous identification code of a *conduit*.

Fixed — A term describing items within the cabling which are not easily reconfigured.

Local Closure — A *closure* housed in the same node as the *closure* of interest and to which the *closure* of interest in directly connected via *fixed* optical fibres or *cables*.

Local Closure Connectivity — A description of the interconnections of the *closure* of interest at the *node* in which that closure is installed.

Nodal Connectivity — A description of the interconnections between two or more *nodes*.

Nodal Contents — The *closures*, *cables*, and *conduits* within a specific *node*.

Node — A point at which installed cabling is jointed or terminated.

NOTE: a *node* may be "virtual". This is defined as a point at which no current joint or termination is undertaken but at which a joint or termination point may be subsequently installed.

Node ID	The unambiguous identification code of a *node*.
Node Location	A description of the geographic position of a *node*.
Node Name	The common name given to a specified *node*.
Optical Fibre ID	An unambiguous identification of an optical fibre. This is frequently a combination of the *OF Marker* and the *Cable ID*.
OF (Optical Fibre) Marker	A means by which an optical fibre is identified within a specified *cable*.
Point of Entry/Egress	A device, mechanism or fitting through which *cables*, *conduits* or optical fibres enter or leave *nodes* or *closures*.
Port ID	An unambiguous identification code of a *point of entry/egress* to or from a *closure*.
Remote Closure	A *closure* housed in a different *node* to the *closure* of interest and to which the *closure* of interest in directly connected via *fixed* optical fibres or *cables*.
Remote Closure Connectivity	A description of the interconnections of the *closure* of interest at *adjacent* or *remote nodes*.
Route	The path along which a *cable* will be laid between two specified *nodes*.
Route ID	The unambiguous identification code of a *route*.
Route Length	The length of a specified *route*.
Site	A building or group of buildings that comprise the premises served by the fibre optic cabling.
Termination Type	Information relating to the purpose or design of the termination method for a specified optical fibre. Examples of this would be the specific type of connector (ST, SMA, SC etc.) or the type of joint created (internal joint, ST Pigtail etc.).

SCHEMATIC APPROACH

The schematic approach comprises the following documents:

- SITE PLAN
- SITE SCHEMATIC
- NODAL SCHEMATIC (for each node)
- CLOSURE SCHEMATIC (for each closure)
- CLOSURE TEST REGISTER (for each closure)

Where the use of FIA Installation Documentation Practices is specified within a Quality Plan they must be undertaken in accordance with this document unless explicitly stated otherwise. This ensures standardisation of approach enabling third parties to read and understand the information contained within the completed documentation. However, the Fibreoptic Industry Association cannot accept any responsibility for the correctness of the actual information contained within the final documentation supplied.
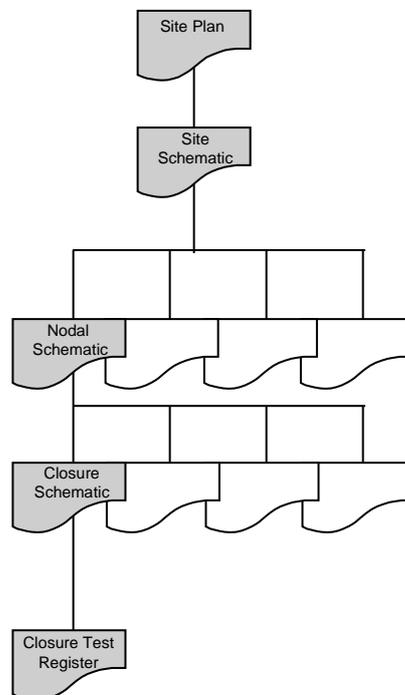
SITE PLAN

This shall depict the physical layout of the site served by the cabling infrastructure and shall show the following information:

- node location
- routeing information
- route environment

SITE SCHEMATIC

This shall depict the topology of the cabling infrastructure and shall be related to the Site Plan. The following information shall be detailed:

- node IDs, names and locations
- route IDs and lengths between nodes
- cables IDs, types and lengths within routes
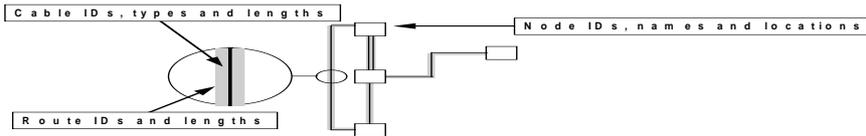
NODAL SCHEMATIC

This shall depict the layout of each node and shall be related to the Site Schematic. The following information shall be detailed for each node:

- closure IDs and types and their positions within the node
- cable IDs and their points of entry/egress to and from closures
- conduit IDs, their contents and their points of entry/egress to and from closures
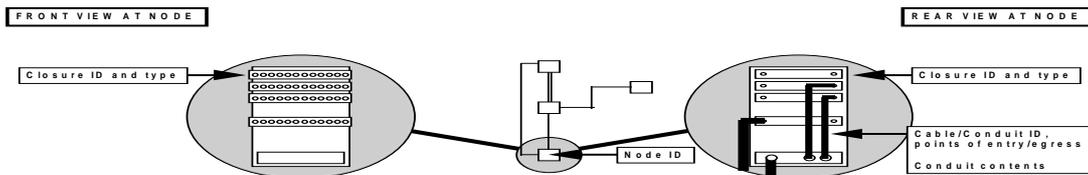
CLOSURE SCHEMATIC

This shall depict the layout of each closure and shall be related to the Nodal Schematic. The following information shall be detailed for each closure and for each optical fibre within the closure:

- cable/conduit IDs and entry points
- optical fibre IDs
- termination types
- adaptor types used
- access port ID on the closure
- connections to other closures at the node
- closure ID and port ID
- node ID and closure ID of adjacent (next) nodes
- node ID, closure ID and port ID of remote access point
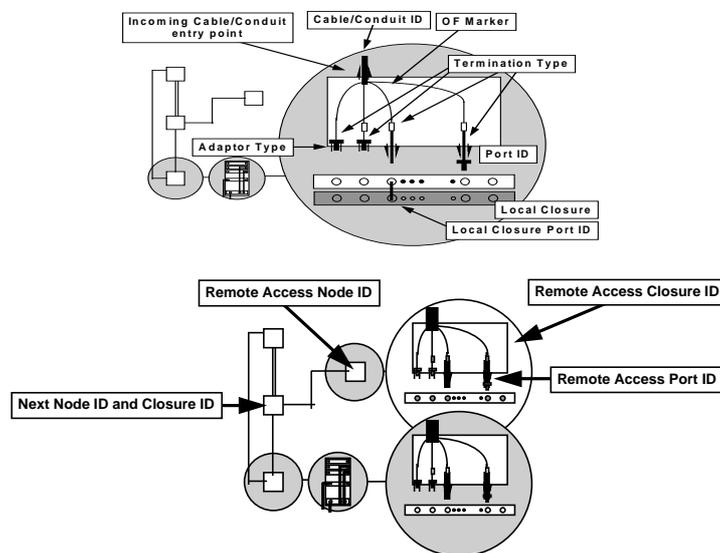
CLOSURE TEST REGISTER

The Closure Test Register is a text based document which details or references the actual results measured on a specified fibre optic span. There is no schematic equivalent.

TEXTUAL APPROACH

The textual approach comprises the following documents:

- Site Plan
- Nodal Register
- Route Register
- Cable Register
- Nodal Connectivity Register (for each node)
- Route Contents Register (for each route)
- Conduit and Conduit Contents Register
- Closure Register
- Nodal Contents Register (for each node)
- Local Closure Connectivity Record (for each closure)
- Remote Closure Connectivity Record (for each closure)
- Closure Test Register (for each closure)
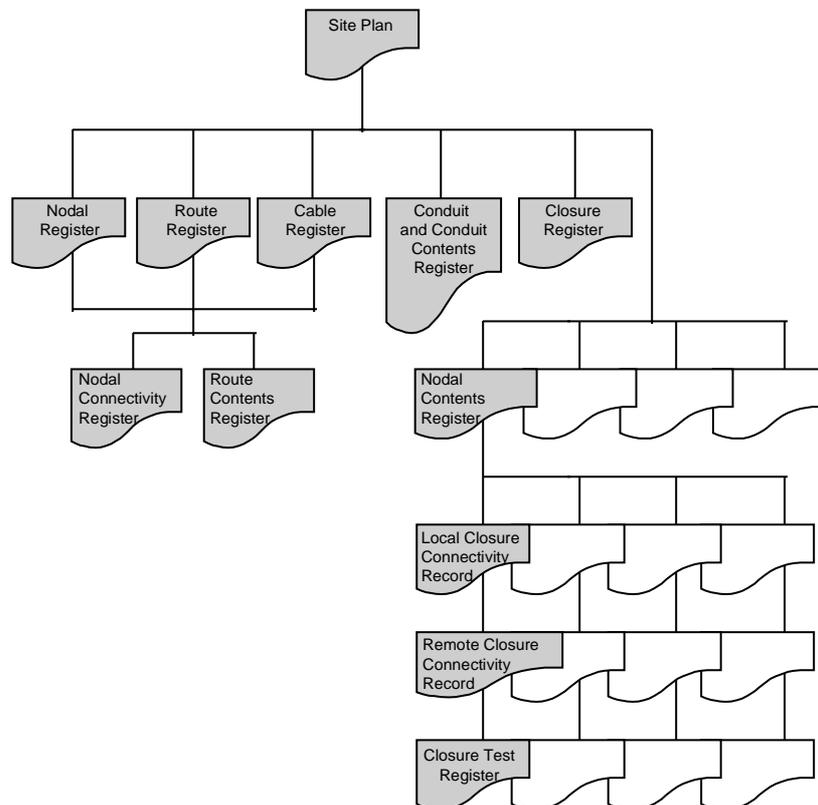
The textual approach has been supported by the development of the attached Installation Documentation Templates. They can be used as provided and when used in this manner they are copyright of the FIA. Alternatively they may be used as the basis for a documentation system or incorporated into an existing documentation system.

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NODAL REGISTER

PROJECT NAME	
PROJECT CODE	
PHASE	

PAGE OF	
ISSUE	
DATE	

Node ID, name and location

NODE ID	NODE NAME	NODE LOCATION

Prepared by	NAME
	SIGNATURE

ROUTE REGISTER

PROJECT NAME	
PROJECT CODE	
PHASE	

PAGE OF	
ISSUE	
DATE	

ROUTE ID	FROM		TO	
	NODE ID	NODE NAME	NODE ID	NODE NAME

Prepared by	NAME
	SIGNATURE

CABLE REGISTER

PROJECT NAME		PAGE OF	
PROJECT CODE		ISSUE	
PHASE		DATE	

CABLE ID	ROUTE ID	NODE ID		CABLE DETAILS	
		FROM	TO	TYPE	LENGTH

Prepared by	NAME
	SIGNATURE

CLOSURE REGISTER

PROJECT NAME		PAGE OF	
PROJECT CODE		ISSUE	
PHASE		DATE	

Closure ID, type and form

Node ID

CLOSURE ID	NODE ID	CLOSURE DETAILS	
		TYPE	FORM

Prepared by	NAME
	SIGNATURE

CONDUIT and CONDUIT CONTENTS REGISTER

PROJECT NAME		PAGE OF	
PROJECT CODE		ISSUE	
PHASE		DATE	

CONDUIT ID	NODE ID	CLOSURE ID		CONTENTS	
		FROM	TO	CABLE ID	GROUP

Prepared by	NAME
	SIGNATURE

NODAL CONNECTIVITY REGISTER

PROJECT NAME	
PROJECT CODE	
PHASE	

PAGE OF	
ISSUE	
DATE	

NODE ID	
NODE NAME	
NODE LOCATION	

Cable ID and type

Remote Node ID

Remote Node ID

Route ID

Node ID, name and location

REMOTE NODE ID	ROUTE ID	CABLE DETAILS	
		ID	TYPE

Prepared by	NAME
	SIGNATURE

ROUTE CONTENTS REGISTER

PROJECT NAME		PAGE OF	
PROJECT CODE		ISSUE	
PHASE		DATE	

ROUTE ID	FROM NODE ID	TO NODE ID	ROUTE LENGTH	CABLE ID	CABLE LENGTH

Prepared by	NAME
	SIGNATURE

NODAL CONTENTS REGISTER

PROJECT NAME	
PROJECT CODE	
PHASE	

PAGE OF	
ISSUE	
DATE	

LOCAL NODE ID	
NODE NAME	
NODE LOCATION	

Port ID and type

REAR VIEW AT NODE

From Closure ID

Cable/Conduit ID

Local Node ID

To Closure ID

Port ID and type

FROM CLOSURE ID	PORT ID	PORT TYPE	CABLE/ CONDUIT ID	TO CLOSURE ID	PORT ID	PORT TYPE

Prepared by	NAME
	SIGNATURE

LOCAL CLOSURE CONNECTIVITY RECORD

PROJECT NAME		PAGE OF	
PROJECT CODE		ISSUE	
PHASE		DATE	

LOCAL NODE ID	
NODE NAME	
NODE LOCATION	

CLOSURE ID	

INCOMING OPTICAL FIBRE			CLOSURE CONNECTIVITY			LOCAL CLOSURE	
PORT ID	CABLE/ CONDUIT ID	OF MARKER	TERM'N TYPE	ADAPTOR TYPE	PORT ID	CLOSURE ID	PORT ID

Prepared by	NAME
	SIGNATURE

REMOTE CLOSURE CONNECTIVITY RECORD

PROJECT NAME		PAGE OF	
PROJECT CODE		ISSUE	
PHASE		DATE	

LOCAL NODE ID	
NODE NAME	
NODE LOCATION	

CLOSURE ID	

OF ID				NEXT CLOSURE		REMOTE ACCESS POINT		
CABLE/ CONDUIT ID	OF MARKER	PORT ID		NODE ID	CLOSURE ID	NODE ID	CLOSURE ID	PORT ID

Prepared by	NAME
	SIGNATURE

CLOSURE TEST REGISTER

PROJECT NAME	
PROJECT CODE	
PHASE	

LOCAL NODE ID	
NODE NAME	
NODE LOCATION	

PAGE OF	
ISSUE	
DATE	

CLOSURE ID	

OF ID				OTDR PRE-TEST REFERENCE			OTDR POST-TEST REFERENCE			ATTENUATION MEASUREMENTS					
CABLE/ CONDUIT ID	OF MARKER	PORT ID	850nm	1310nm	1550nm	850nm	1310nm	1550nm	Spec. 850 (dB)	Actual 850 (dB)	Spec. 1310 (dB)	Actual 1310 (dB)	Spec. 1550 (dB)	Actual 1550 (dB)	

Prepared by	NAME
	SIGNATURE