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Optical Consolidation Rack (OCR)

Installation practices

About this document ...

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1 *Introduction*

This document contains the mandatory installation instructions and standards that must be complied with by Field Technicians who are or, will be engaged in the provision of optical fibre connectivity for Fibre to the Premises (FTTP) & Fibre to the Cabinet (FTTC) services through an Optical Consolidation Rack (OCR) at a Next Generation Access (NGA) node.

This document supplements information that is supplied by Prysmian which covers the following:

- Assembly of the metal components that form the OCR carcass.
- Installation of the OCR Sub Rack(s) into the OCR carcass.

These instructions are available in the following Bookstore collection by [clicking here](#).

2 *Scope*

This document provides installation instructions for all activities that are needed for the provision of COF 201 cables from cable chambers, Hydra cables, fibre routing, storage and splicing on an OCR for FTTP & FTTC (FTTx) services. The document does not cover cabling standards or techniques for routing fibres to or from the OCR. Neither does it cover the provisioning of fibres through the OCR for any other services than FTTx.

3 *The OCR Concept*

The OCR performs the same functions as an Optical Flexibility Rack (OFR) currently found in the network albeit by using different techniques. An OCR will be used instead of OFR for connectivity of FTTC & FTTP products at all NGA nodes.

3.1 *Comparison of OFR and OCR Features*

Compared to OFRs, there are some fundamental differences that must be understood before commencing the routing of fibres across an OCR. The use of dedicated storage areas for unused fibres that do not require splicing immediately at Day 1 is one such fundamental difference.

On an OCR, COF 201 unused fibres are stored using the storage facility at the top of the rack. Similarly, unused fibres from Hydra Cables are stored in a storage area this time on the right side of each Sub Rack. To illustrate this difference between an OFR and an OCR on this point, consider and compare techniques used on each:

On an **OFR**, COF 201 cable is routed to a group of splice trays and all fibres are laid into a sequence of splicing trays, normally in ascending positions. The fibres in the COF that are immediately required (Day 1 fibres) are spliced; the fibres that are not immediately required remain in the splice trays as spare fibres for later use.

This is **not** the case for an OCR. In the similar scenario to that above, the principle used for an OCR is that when a COF 201 is routed to it, only the “Day 1” fibres are routed to Sub Rack, Sub Rack Shelves and Splice Trays. The spare fibres in the COF 201 are stored in the fibre storage facility known as the Cable Break Out (CBO) which is at the top of the OCR. Fibres are stored in half element storage reels until they are required. When these fibres are required they are removed from the storage reel and all six fibres are routed down the rack to the next available Sub Rack Shelf where they are spliced.

For Hydra cables on the OCR, the same principle applies the only difference being that the storage area for the Hydra fibres is in the right hand side of the OCR Sub Rack rather than at the top of the rack as it is for COF. This is known as the Hydra Cable Storage Area (HCSA).

Further details of how these storage areas are used can be found as part of the OCR Installation Instructions that can be accessed via the Installation Instructions which can be accessed via [Section 4](#) of this document.

3.2 Introduction to OCR Hardware

The OCR comprises a 900x300x2200mm rack which can accommodate up to 8 OCR Sub Racks. The rack can be accommodated under 21C ironwork or ironwork complying with the standard 2.2m rack fittings. Initial deployment should take in consideration any requirements for growth.

3.2.1 OCR Rack

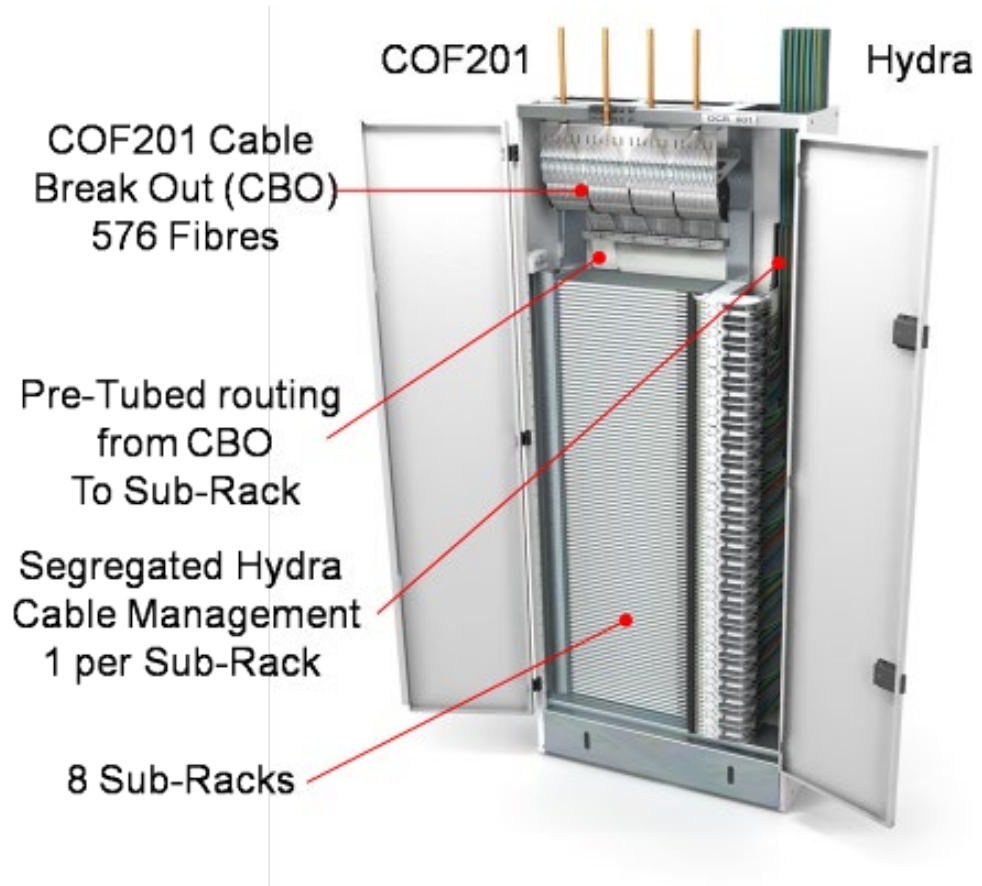


Figure 1 – A fully populated OCR Rack.

3.2.2 OCR Sub-Rack

The OCR Sub-Rack contains 12 Sub Rack Shelves:



Figure 2 - An OCR Sub-Rack

Each OCR Sub-Rack has the capability to store Hydra cables if immediate splicing of the fibre(s) is not required. The Hydra storage areas comprise 3 areas each area having 12 storage reels, each reel can store up to 4 fibres.

3.2.3 Sub Rack Shelf

Each Sub Rack Shelf contains 6 single circuit splice trays

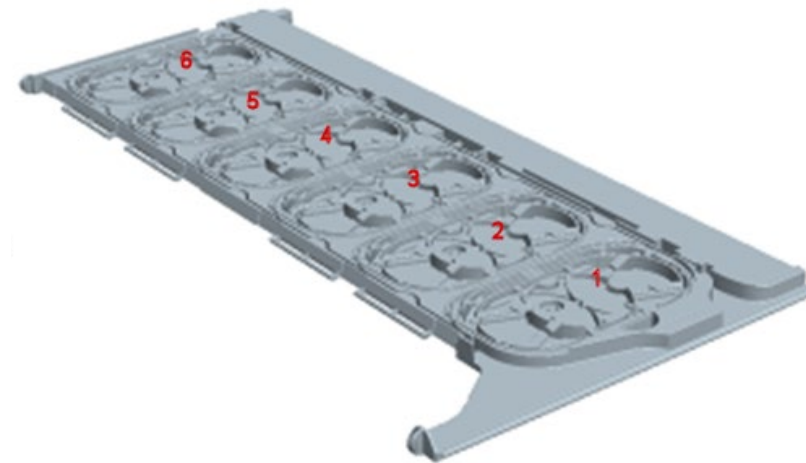


Figure 3- An OCR Sub Rack Shelf

3.2.4 OCR Capacity

The capacity of a single OCR is calculated as:

8 Sub-Racks x 12 Sub Rack Shelves x 6 Splice trays =
576 single circuit managed positions per OCR.

4 OCR Installation Instructions

Installation of the rack hardware is available in the following Bookstore collection by [clicking here](#).

4.1 Part 1 - Installation, Termination and Storage of COF 201 in the CBO

This activity includes:

- The routing of COF201 into the OCR through appropriate entry points.

- Preparation of the cable to expose the elements and fibres.
- Routing and storage of spare fibres into the Cable Break Out Area (CBO).
- Storing of fibres as half- elements in the CBO fibre storage reels.

This information can be accessed via this hyperlink:



OCR Cable

Installation Guide Part

Link to file

4.2 Part 2 - Remove fibres from the CBO Storage and Route to Sub Rack/Splicing Trays

This activity includes:

- Removing fibres from storage in OCR CBO.
- Routing the released fibres to the designated OCR Sub Rack
- Routing the released fibres to the designated Splice tray.
- Laying fibres in the splice tray.

This information can be accessed via this hyperlink:



Remove fibres from
the CBO storage and

Link to file:

4.3 Part 3 - Installation, Termination & Storage of Hydra Cable in the Hydra Cable Storage Area (HCSA)

This activity includes:

- The routing of Hydra cables into the OCR through appropriate entry points.
- The routing of Hydra cables to the nominated OCR Sub Rack.
- Routing and storage of spare fibres into the Hydra Storage Area.
- Routing of fibres needing splicing to appropriate Splice Tray positions.

This information can be accessed via this hyperlink:



Installation,

termination & storage

Link to file:

4.4 Part 4 - Extract Hydra fibres from Hydra Cable Storage Area (HCSA) and Splice

This activity includes:

- Extracting Hydra cable fibres from storage.
- Routing the released fibres to the designated OCR Sub Rack shelf
- Routing the released fibres to the designated Splice tray.
- Laying fibres in the splice tray for splicing

This information can be accessed via this hyperlink:



Extract Hydra Cables
from HCSA and Splice

Link to file:

4.5 Part 5 – Re-arrangement of spliced fibres

This activity includes:

- Identifying the Hydra cable fibre.
- Identifying the COF cable fibre.
- Removing the splice and fibre from splice tray.
- Cutting the Hydra fibre.
- Overlaying new Hydra fibre.

This information can be accessed via this hyperlink:



Link to file:
Re-arrangement of sp

4.6 Part 6 – Replacement of Hydra cable

This activity includes:

- Identifying the Hydra cable fibre.
- Removing the splices and fibres from splice trays.
- Cutting the Hydra cable.
- Installing new Hydra cable.

This information can be accessed via this hyperlink:



Replacement of
Hydra cable

Link to file:

5 **Glossary**

Abbreviation	Explanation
BFB	Blown Fibre Bundle
BFT	Blown Fibre Tubing
BLT	Bend Limiting Tubing
CBO	Cable Break Out
COF	Cable Optical Fibre
DFW	Dual Fibre Working
FTTC	Fibre to the Cabinet
FTTP	Fibre to the Premises
FTTx	Fibre to the Cabinet or Premises (generic term)
GEA	Generic Ethernet Access
GigE	Gigabit Ethernet
HCSA	Hydra Cable Storage Area
NGA	Next Generation Access
OCR	Optical Consolidation Rack
OFR	Optical Flexibility Rack
OLT	Optical Line Termination

END OF DOCUMENT