5G and fronthaul monitoring with the OTH-7000

EXFO

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EXFO RFTM

Benefits

Ensure 'first-time right' fiber buildout with mobile app testing to reduce return visits

Automated segment-by-segment baselining and threshold setting

Automated alerting upon deviations from baseline

Reduced MTTR with rapid detection and fault on map localization

Use case description

EXFO RFTM meets a wide variety of fiber monitoring needs. When used with the OTH-7000 optical test head, it is ideal for applications such as 5G and fronthaul monitoring, particularly during the buildout phase.

A typical use case for this solution would be when testing and monitoring fronthaul optical networks from the distributed unit (DU) to the radio unit (RU), so as to ensure the connectivity, integrity and possibly the security of these links.

The illustration below shows where the unit would be placed to conduct monitoring.
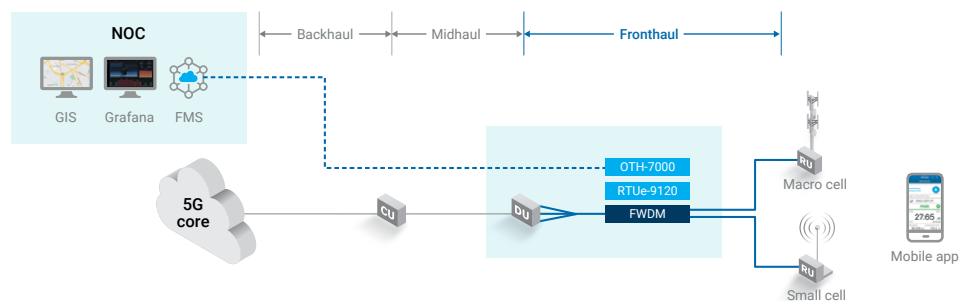
5G and fronthaul

Figure 1. 5G and fronthaul (option 1)

End-to-end monitoring options and results

Conducting end-to-end monitoring with Nova Fiber and the OTH-7000 provides centralized testing with mobile app test execution and results. This not only reduces the need for complex, expensive field test equipment, but also provides valuable analytics to detect trends in loss changes, allowing you to ensure that your 5G buildout is done right the first time.

What to look for

- Changes in end-to-end loss – including breaks and degradations
- Location and identification of the loss (i.e., which segment, fiber, splice, connector, distance from OTDR)
- Who to assign the issue to (i.e., contractor or own maintenance group)
- Geo-location of fault: pinpoint where along the route or identify physical landmarks to help locate fault
- Source of loss: macro-bend, disconnect, misconnect, damaged cable (natural cause, accidental or malicious)

Dimensioning for SLA considerations

Scan time

1 fiber	8 fibers	16 fibers
3 s	24 s	48 s
5 s	40 s	80 s (i.e., 1 min 20 s)
50 s (~iOLM)	400 s (i.e., 6 min 40 s)	800 s (i.e., 13 min 20 s)
60 s	640 s (i.e., 10 min 40 s)	1280 s (i.e., 21 min 20 s)

The evolving transport network
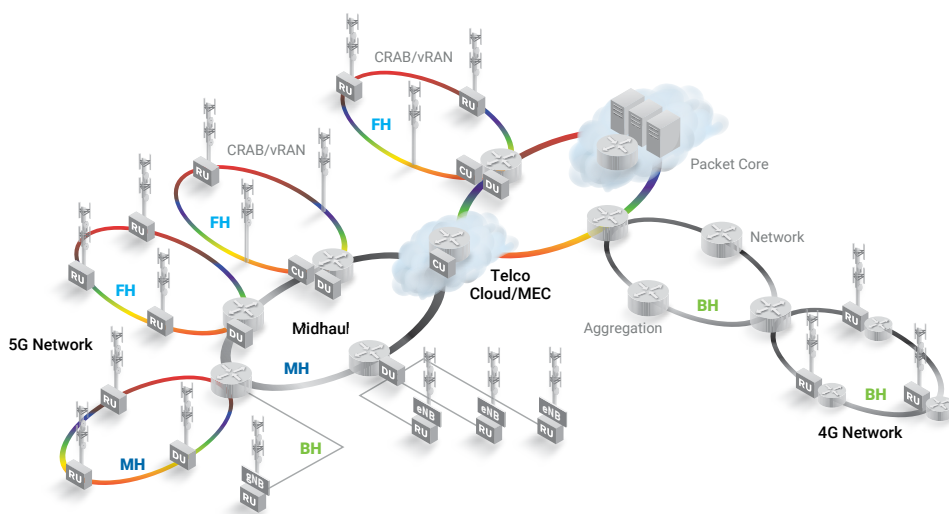
Fronthaul (DU-RU)	Midhaul (CU-DU)	Backhaul (CU-Core network)
Ethernet packets	Carrier Ethernet	Carrier Ethernet
eCPRI Protocol	F1 Interface	S1 Interface
Range: 1-10 km	Range: ~40-80 km	Range: up to 200 km
Hops: ~8	Hops: ~15	Hops: ~15
Latency constraints: 100 us	Latency: ~1 ms	Latency: ~1 ms

Figure 2. The evolving transport network

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