

# Fiber Characterization Global Services

## FEATURES:

- End to End Fiber Characterization
- Project Management
- Vendor Technical Remediation
- Full Documentation Packages

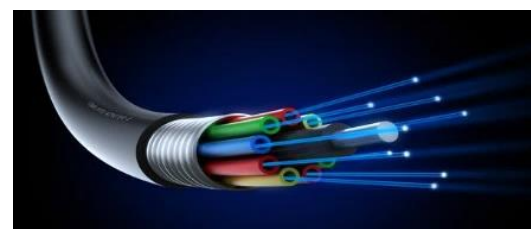
## BENEFITS:

- Greatly accelerated time to new capacity
- Assurance of highest quality
- Future scale & serviceability
- Expertise where most needed

## SERVICE OVERVIEW:

Cloud-based network operators, enterprises and cable or telco service providers – all depend on networks comprised of fiber-connected data centers to serve their subscribers and/or their internal operations. These networks are typically made up of a combination of both self-owned and operated network facilities and dark fiber and a large amount of leased capacity and space provided by multiple network and facilities providers. The pace of growth in subscriber traffic and enterprise data demands constant growth of these networks. Putting new data centers and new leased waves in service requires careful evaluation of these facilities and coordination with these providers. Once up and running, these networks require constant testing and analysis to ensure that all routes are performing optimally.

ARRIS's Fiber Characterization teams manage the task of bringing new fiber routes on line. Using industry leading test gear and analysis tools from Exfo they document all the physical and logical attributes of each fiber span, measure the quality and continuity of fiber routes from end to end and coordinate with internal resources and/or external vendors to ensure remediation of any issues found.



## Project Management

ARRIS project managers are responsible for working closely with the customer’s circuit acquisition teams as well as the technical personnel from the customer’s vendor. Typically, these projects initiate with customer specifications and requirements for the leased capacity. Next, the ARRIS project manager plans site visits to test the capabilities of the circuit. These events require a great deal of coordination with the customer, vendor and in many cases other 3rd parties potentially involved in fusion splicing or other remedial work. These activities are usually managed within tight timeframes inside of maintenance windows which are scheduled as part of project planning.

## Testing

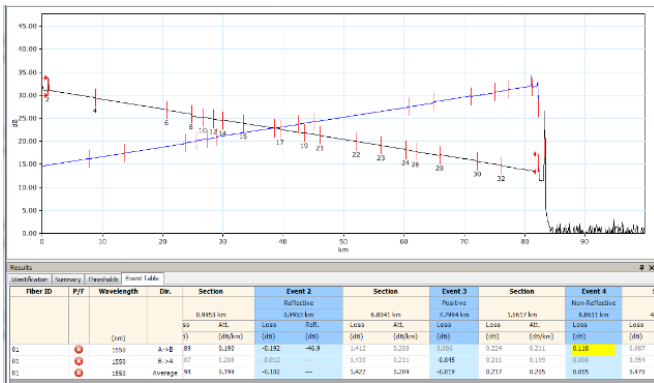


Fig. 1 Long Shot Testing Reports on the Complete Span

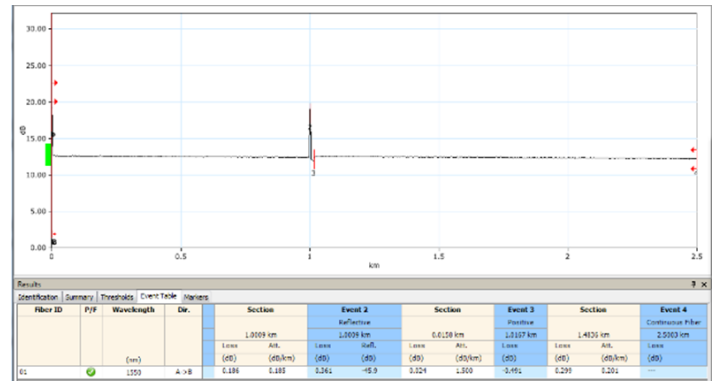


Fig. 2 Short Shot Testing from POP to OSP

ARRIS Fiber Characterization includes:

- The use of various types of OTDR (Optical Time-Domain Reflectometer) modules to permit a wide range of fiber testing
- CD/PMD (Chromatic Dispersion/Polarization Mode Dispersion) testing
- 10G LAN/PHY and WAN/PHY Bit Error Rate (BER) testing
- FastReporter 2 analysis and software reporting
- ConnectorMax analysis to verify fiber termination faces

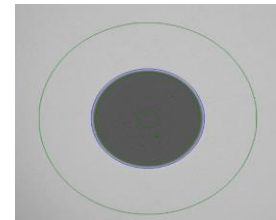


Fig. 3 Fiber Scope Detects Imperfections

## Documentation

ARRIS provides documented route and span drawings and maintains them as a part of the project. ARRIS has developed databases that enable route and span information to be updated as changes take place, greatly improving efficiency and future serviceability

- POP Locations
- Cable / Duct Route Drawings
- Cable routes, Cable sizes, Duct sizes and utilization, Key splice Locations
- Cable Utilization (Single Line Drawings) SLD'S
- Circuits
- Utilization by Service or By Customer
- Total loss A-Z
- Events A-Z (splices, patches....)
- Creation of dynamic traces and light paths end-to-end

Project Ref.:	555555555	Updated Site Coords	Latitude: 55.555550 Longitude: 1.111111
Site:	555		
Event:	2017-Q3-24		
Initials:	JL		
7 Notes:			
8 Site Information			
Vendor:	EQUINIX	EQUINIX	EQUINIX
Floor & Rooms:	2ND 555	5th 515	BASEMENT POC 1/POINT OF EN
Rack & Patch Panels:	LS 155	ODF 5 515	BFP A TRAY 1
Circuit/Proj Ref:	555 Ports (8 Fiber no.): 5	51	51
	555 Ports (8 Fiber no.): 6	52	52
Panel Connector Type ->	LC-PC	LC-PC	unknown
Panel Distance & Separation ->	0m	25m	200m
		223m	0
		223m	0
		223m	0

Fig. 4 Detailed Documentation of Fiber



### The ARRIS Fiber Characterization Solution

ARRIS Global Services offers ongoing end-to-end management services including coordinating field teams on the customer side and delivery teams on the vendor side. This entails creating detailed project plans, schedules, understanding and enforcing the customer's qualifications and requirements with the vendor, analyzing test data, instructing and coordinating remedial work and final handoff to the equipment install teams.

ARRIS fiber analysts test and measure the circuits and provide results back to the team who interpret the results and document. To conclude acceptance of the circuit from a quality perspective, the project manager and teams follow up on specific remedial work required by the vendor and in most cases complete site survey and audit documentation. The project manager further manages scope changes and details along the delivery path including vendor escalations until closure. At the closure point, the project manager reviews and completes all documentation packages.

### Global Teams

Fiber Characterization services are available worldwide with teams operating out of Santa Clara, Atlanta, Toronto, London, Dublin, Amsterdam, Singapore, Australia and Buenos Aires.

### Turn to ARRIS To

- Document and verify fiber network assets
- Fully test and analyze inside and outside plant fiber using OTDR, CD/PMD and OIL testing and provide detailed results packages
- Fusion splice fibers
- Coordinate with fiber providers and provide remedial support expertise to resolve fiber deficiencies and provide the best possible plant
- Verify all deliverables are meeting required specifications for network owners and provider or vendor partners
- Perform BER testing as required on leased or owned waves and provide test reports
- Collate all field test data, vendor data and physical path data into a final route turn-over package and provide guidance on acceptability of the fiber plant

## CUSTOMER CARE

Contact Customer Care for product information and sales:

- United States: 866-36-ARRIS
- International: +1-678-473-5656