

# Session 1 Definitions

## Fiber Terms

<b>Optical Fiber</b>	Flexible transparent fiber, such as glass, through which light can be transmitted by successive internal reflections.
<b>Fiber Cable</b>	One or more insulated optical fibers that run inside a cable jacket along with the fillers and strength members.
<b>Core</b>	The center optical layer of the glass fiber where light is transmitted. It measures from 5 $\mu$ m to 100 $\mu$ m in diameter.
<b>Cladding</b>	The outside optical layer in a fiber that traps the light in the core and guides it along. It is the rest of the glass and it measures from 125 $\mu$ m to 140 $\mu$ m. This is the size of some human hairs.
<b>Strength Members</b>	Aramid (Kevlar) fibers used to add axial strength. While this adds strength axially it does not help with bending.
<b>Cable Jacket</b>	A tough outer covering that protects all of the inner components.

## Cable Terms

<b>Terminus</b>	Device to set and hold an end of an optical fiber permanently in a location inside a connector.
<b>Ferrule</b>	A mechanical fixture, generally a rigid tube, used to confine the stripped end of a fiber.
<b>End Face</b>	Polished surface at the end of an optical fiber termini.
<b>PC Polish</b>	Physical Contact Polish refers to the shape that the end face has after it is polished.
<b>Cable Assembly</b>	A single fiber optic cable with termini installed at both ends.
<b>Fiber Optic Bundle</b>	Assembly that contains either: Two or more cables jacketed together. A jacketed duplex is shown. A group of cables or assemblies tied together.

## Material Safety Terms

<b>Dust Cap</b>	Device that protects the end face of a terminus or the front face of a connector from contamination and damage. A dust cap must be clean or they will contaminate the fiber optics.
<b>Discontinuity</b>	Point at which an optical fiber breaks or has a crack.
<b>High Vibration Area</b>	Typically include, but are not limited to, the wing, engine strut, sailboat, wheel well, landing gear, and empennage.
<b>Tie</b>	A means of holding the components of a cable bundle securely. Ties may be tape, plastic, or string.
<b>Support</b>	A means of connecting fiber optic cables and bundles to the aircraft structure, such as clamps, ring posts, race ways, etc.