WHAT IS CLAIMED IS:

1. A method of remotely stopping a crack in an internal component of a gas turbine engine with an integrated repair interface, the crack comprising an open space formed along an exterior surface of the internal component and having a corresponding base at a bottom of the open space, the method comprising:

inserting a working head attached to a cable delivery system through an excess port of the gas turbine engine, the working head comprising a drill component;

positioning the working head adjacent to the crack;

facilitating a precision operation by temporarily attaching the working head to the internal component adjacent to the crack with an attachment mechanism; and

forming a flexible joint at the base of the crack by drilling with the drill component a hole into a deepest point of the crack relative to the exterior surface of the internal component so as to stop propagation of the crack, wherein the hole has an average diameter in a plane perpendicular to or tangent to the exterior surface at the crack that is within a range of 0.1 mm to 3.25 mm.

2. The method as in claim 1, wherein the drill component comprises a fiber optic laser drill.

3. The method as in claim 1, wherein the drill component comprises a mechanical twist drill.

4. The method as in claim 1, wherein the flexible joint is formed to be about 10% to about 50% of the size of the base of the crack.

5. The method as in claim 1, wherein the hole is defined by a curved inner surface.

6. The method as in claim 1, wherein the hole is drilled in a desired location with precision accuracy within about 0.5 mm or less.

7. The method as in claim 1, wherein the attachment mechanism further comprises a suction cup, and wherein temporarily attaching the working head to the internal component further comprises applying a vacuum within the suction cup so as to hold the working head onto the external surface of the internal component.

8. The method as in claim 1, wherein temporarily attaching the working head to the internal component further comprises:

applying a hot melt adhesive to the external surface of the internal component; and

adhering the working head to the internal component with the hot melt adhesive.

9. The method as in claim 8, wherein the method further comprises:

following the formation of the flexible joint, applying heat to the hot melt adhesive so as to melt the hot melt adhesive; and

removing the working head from within the gas turbine engine.

10. The method as in claim 1, wherein the internal component has a known shape and size, wherein the attachment mechanism comprises three grip arms, and wherein temporarily attaching the working head to the internal component further comprises bringing the grip arms together onto an edge of the internal component until the working head is secured.

11. The method as in claim 1, wherein the internal component is a turbine blade of the gas turbine engine.