WHAT IS CLAIMED IS:

1. A method of supplying material to a defective area in a component in a gas turbine engine,

the method comprising:

inserting a repair tool through an access port of a gas turbine engine;

positioning a tip of the repair tool adjacent to a defective area of the component;

temporarily attaching the tip of the repair tool to a surface of the component at a location adjacent to the defective area of the component; and

supplying a new material to the defective area to repair a defect in the defective area, the new material supplied using the repair tool, wherein the new material comprises a liquid metal, and

wherein supplying the new material to the defective area comprises:

supplying the liquid metal from a material supply end of the repair tool to the tip of the repair tool; and

expelling the liquid metal from the tip of the repair tool in a direction of the defect, and

wherein the repair tool comprises a high temperature conduit extending lengthwise between the material supply end of the repair tool and the tip of the repair tool,

and wherein supplying the liquid metal from the material supply end of the repair tool to the tip of the repair tool comprises supplying the liquid metal through the high temperature conduit.

2. The method of claim 1,

wherein the high temperature conduit comprises a ceramic material.

3. The method of claim 1,

wherein the repair tool further comprises a heating element provided in operative association with the high temperature conduit,

and wherein supplying the liquid metal from the material supply end of the repair tool to the tip of the repair tool further comprises generating heat within the high temperature conduit via the heating element while supplying the liquid metal through the high temperature conduit.

4. The method of claim 1,

wherein the repair tool comprises a nozzle positioned at or adjacent to the tip of the repair tool, and

wherein expelling the liquid metal from the tip of the repair tool comprises expelling the liquid metal from the nozzle into a fillable volume defined by the defect.

5. The method of claim 1, further comprising:

inserting an optical probe through the access port or through an adjacent access port of the gas turbine engine, the optical probe being configured to provide a view of the defective area of the component.

6. The method of claim 5, wherein positioning the tip of the repair tool adjacent to the defective area of the component comprises positioning the tip based at least in part on the view provided by the optical probe.

7. The method of claim 1, wherein temporarily attaching the tip of the repair tool to the surface of the component comprises using an attachment mechanism to temporarily attach the tip of the repair tool to the surface of the component, the attachment mechanism comprising a tripod grip, a glue, or a vacuum sucker.

8. The method of claim 1, wherein the component comprises an airfoil.

9. The method of claim 8, wherein the surface defines a tip of the airfoil.

10. The method of claim 1, wherein the repair tool comprises a plurality of articulation cables coupled to the tip, the articulation cables configured to reorient the tip within the gas turbine engine.

11. The method of claim 1, wherein repair the defect comprises using the new material to build up a surface of the component.

12. The method of claim 1, wherein repair the defect comprises using the new material to fill the defect, the defect defining a fillable volume.

13. The method of claim 1, wherein temporarily attaching the tip of the repair tool to the surface of the component comprises gripping the surface with an attachment mechanism comprising a plurality of grip arms.

14. The method of claim 13, wherein the component comprises an air foil and wherein the plurality of grip arms are configured to grip a tip of the airfoil.

15. The method of claim 1, wherein the repair tool comprises an attachment mechanism comprising one or more suction cups, and wherein temporarily attaching the tip of the repair tool to the surface of the component comprises applying a vacuum within the one or more suction cups to form a suction attachment with the surface of the component.

16. The method of claim 1, wherein the repair tool comprises a drill component, and wherein the method further comprises using the drill component to form a precision hole within the defect or defect area.

17. The method of claim 16, wherein the drill component comprises a laser drill, a water jet, a bead blaster, a mechanical twist drill, or a grinding ball.